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A SEMINAR IN ART EDUCATION FOR RESEARCH AND CURRICULUM DEVELOPMENT.
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*ART EDUCATION, *SEMINARS, *CURRICULUM DEVELOPMENT, *SPECIALISTS, *RESEARCH PROBLEMS, EDUCATIONAL RESEARCH, EDUCATIONAL PSYCHOLOGY, PHILOSOPHY, SOCIOLOGY, UNIVERSITY PARK, PENNSYLVANIA

THIS SEMINAR WAS A DEVELOPMENTAL ACTIVITY INTENDED TO STIMULATE RESEARCH AND CURRICULUM DEVELOPMENT IN THE FIELD OF ART EDUCATION. PRIOR TO THIS SEMINAR NO SUBSTANTIAL EFFORTS HAD BEEN MADE TO COORDINATE THE VARIOUS ISOLATED EFFORTS AT RESEARCH AND CURRICULUM DEVELOPMENT THROUGHOUT THE NATION. THERE HAD BEEN FEW ATTEMPTS TO IDENTIFY THE MAJOR PROBLEM AREAS IN ART EDUCATION OR TO FIND MEANS TO STUDY THEM. THIS SEMINAR ATTEMPTED TO FOCUS UPON FIVE MAJOR PROBLEM AREAS--THE PHILOSOPHICAL AREA, THE SOCIOLOGICAL AREA, THE CONTENT AREA, THE EDUCATIONAL-PSYCHOLOGICAL OR TEACHING AND LEARNING AREA, AND THE CURRICULUM OR PROGRAM AREA. NATIONALLY RECOGNIZED SPECIALISTS FROM THE FIELDS OF PHILOSOPHY, SOCIOLOGY, PSYCHOLOGY, ART HISTORY, ART STUDIO, ART CRITICISM, CURRICULUM, RESEARCH, AND EDUCATIONAL PSYCHOLOGY MET WITH RESEARCH SPECIALISTS FROM ART EDUCATION FOR A 10-DAY PERIOD TO EXAMINE THE PROBLEM AREAS AND TO FORMULATE AND EVALUATE RESEARCH PROPOSALS RELATING TO THESE AREAS. TWELVE PAPERS WERE PRESENTED AND EACH PAPER WAS FOLLOWED BY INTENSIVE DISCUSSION. THE OBJECTIVES INVOLVED ESTABLISHING A BASE OF KNOWLEDGE FROM WHICH TO DEVELOP RESEARCH AND CURRICULUM PROPOSALS, DEFINING SPECIFIC PROBLEM AREAS WHICH COULD BE EFFECTIVELY STUDIED THROUGH RESEARCH OR AFFECTED BY CURRICULUM CHANGE, AND REFORMULATING BASIC KNOWLEDGE IN ART EDUCATION. (GC)

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A SEMINAR IN ART EDUCATION FOR RESEARCH AND CURRICULUM DEVELOPMENT

COOPERATIVE RESEARCH PROJECT NO. V-002

EDWARD L. MATTIL
PROJECT DIRECTOR

THE PENNSYLVANIA STATE UNIVERSITY
UNIVERSITY PARK, PA.

1966

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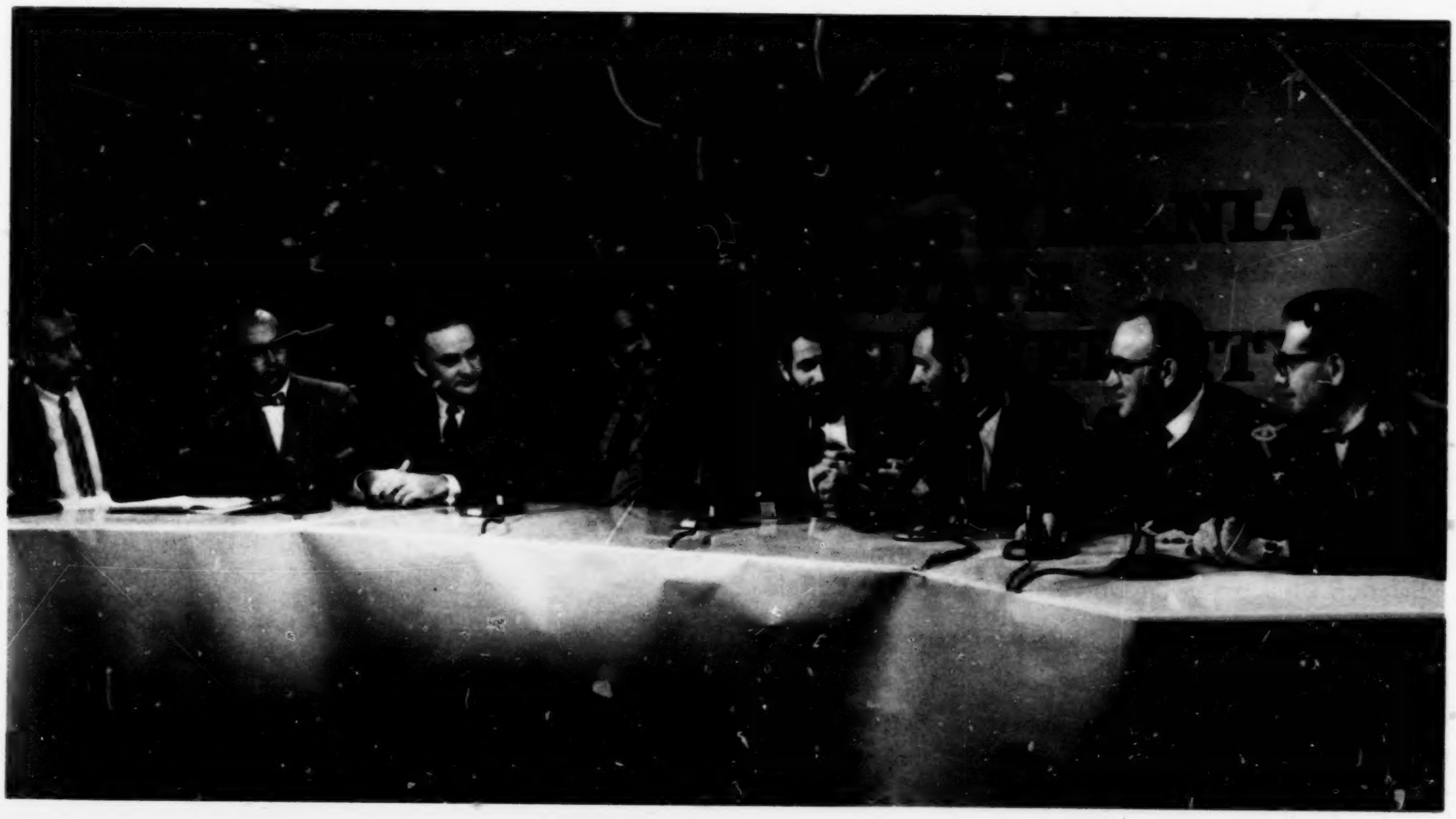

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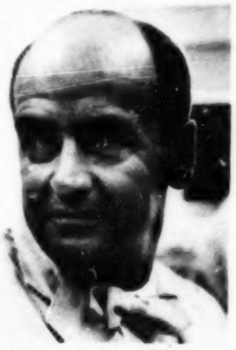
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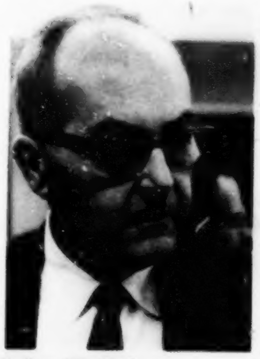
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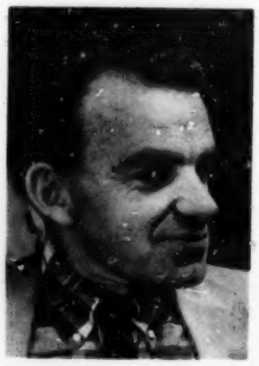
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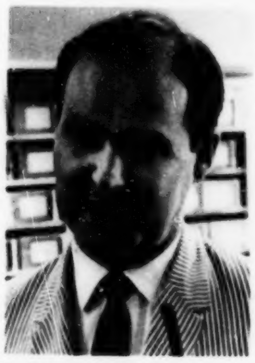
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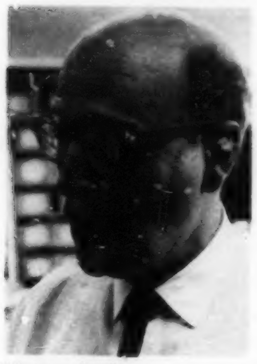
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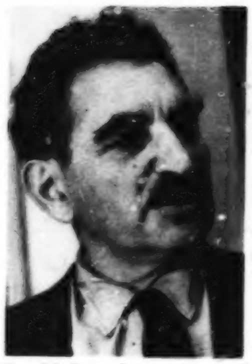
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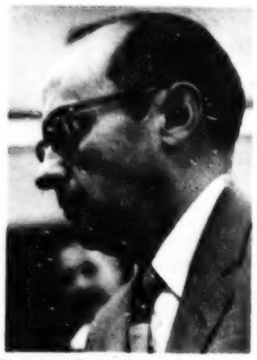
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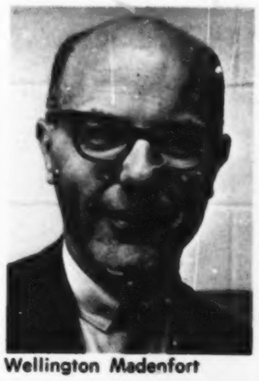
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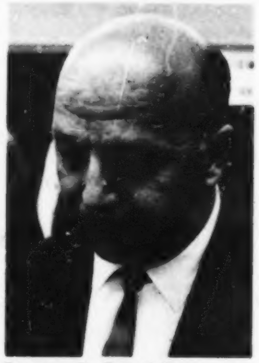
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The success of a venture of this size depends on many people who become sincerely involved and interested. In this case, it includes every name that appears in this publication. The members of the Planning Committee provided unusual knowledge of art education and its related fields in developing the program and the seminar structure.

Those participants who prepared papers and research proposals developed much new material and carefully followed the charges of the Planning Committee.

Miss Kathryn Bloom, Director of Arts and Humanities in the U.S.O.E. offered valuable help and encouragement in all stages of the seminar. Mr. Richard Grove, also of the Arts and Humanities in the U.S.O.E., guided the contract stages of the project. Dr. Harlan Hoffa, Art Specialist in the Arts and Humanities Branch, provided valuable evaluation and contributed much important information to the seminar.

Mr. Robert Beam of the Conference Center at The Pennsylvania State University skillfully managed many important conference details.

The secretarial staff of the Department of Art Education entered into the work of the seminar with great interest and provided assistance far beyond the highest expectation. The staff included Mrs. Helen Dunkel, Mrs. Ellen Sprenkel, Miss Sandra Houser and Miss Darlene Ripka. Mrs. Dunkel deserves special credit for her conscientious attention to every detail of this seminar from its inception to the final report.

Finally, I am indebted to Kenneth Beittel whose wise counsel is always available.

Edward L. Mattil
Project Director

PREFACE

The planning for this seminar began in the Fall of 1962 during a series of dialogues between Kenneth R. Beittel and Edward L. Mattil. In the Spring of 1963, Elliot Eisner express an interest in the idea and early in 1964 Kenneth Beittel, David Ecker, Elliot Eisner, Jerome Hausman, and Edward Mattil met for several days of intense planning. Subsequently, Robert Burkhart contributed generously to the evolving proposal and still later Manuel Barkan joined the planning committee.

The intention of this seminar, the stimulation of research and curriculum development, seemed clear from the outset. The problems of the planners centered about the identification of the most critical broad areas of concern in art education, the selection of those persons in and outside the field of art education who could effectively come to grips with problems, on both theoretical and practical levels, and the designing of a functional structure which could meet the objectives of the seminar.

The initial focus on the broadest areas of concern seemed to cast most problems into five major problems areas which, for lack of better terms, were called: (1) the philosophical or the "why" area, (2) the sociological or the "to whom" area, (3) the content or the "what" area, (4) the educational-psychological or teaching-learning area, and (5) the program or curriculum area.

The rationale for including these definitive areas was stated very simply:

Philosophical inquiry is primarily concerned with the significance of knowledge for the value problems of men, the evaluation of the adequacy of value judgments and the generation of proposals for what ought to be. Philosophical methods are analytical, critical and speculative. It is essential that art education seek the means to make more explicit its underlying value assumptions to define their structural relationship through philosophical methods.

In order to develop curriculum, it is essential to have a sound understanding of cultural and social differences as they exist among students. Differences in values, attitudes, aptitudes, readiness for varying types of motivation, and the needs from education all develop within the social milieu of the students background. This suggests that one of the foundation areas is the sociological and anthropological study of American Society.

Art education derives its language, concepts and processes from the fields of art history, art criticism and studio practice. These areas provide the primary source of the content of art education.

In terms of what is to be learned, what the learner is like, and how learning takes place, art education must face a systematic review and critique of aspects of theories of learning and instruction applicable to the teaching of art at all levels.

Since the realization of those ends art educators seek to attain must be realized through the curriculum, developing a curriculum which is effective, is a necessary condition for the field of art education. There are many useful ideas in the field of curriculum generally -- concepts of continuity, sequence, integration -- that could be useful in developing the art curriculum. Teaching and learning in art incur unique problems that must be resolved with respect to the particular characteristics of art and learning in art. Thus, to be effective, art education must begin systematic and sustained inquiry into the area of curriculum.

Research must be the legitimate concern of art education. Theoretical thinking in art education will produce little without the accompanying rigorous investigation which produces the data necessary to validate theories. Uncontrolled observation is unreliable and experience alone can be both fragmentary and subjective. There is no universal road toward a research foundation for art education but important paths seem evident in the empirical, historical and philosophical directions.

Accompanying the rationale were some general objectives of the seminar. They were:

1. To bring representatives from related disciplines together with art educators to work toward a solution of some basic problems in art education.

2. To focus attention on five major problem areas in art education.

3. To establish a base of knowledge from which to develop research and curriculum proposals.

4. To identify and define specific problem areas which may be effectively studied through research or effected by curriculum change.

5. To develop concerted action proposals of research and curriculum development from an interdisciplinary base of knowledge.

6. To reformulate basic knowledge in art education.

7. To evaluate current basic knowledge in art education.

8. To re-reconsider the goals of art education.

9. To identify criteria for determining the content of art education curricula.

From this a program was structured, covering a ten-day period. The content of this report follows somewhat the actual day-to-day procedure. The seminar started with twelve papers, each answering specific charges laid out by the planning committee. Each paper was followed by intensive discussion. From each major area of concern, a paper was presented by an "outside" specialist such as a philosopher, sociologist, art critic, or psychologist. This paper was followed immediately by one given by an art educator concerned with the same general area, but who responded to different charges. The content area had three specialists representing art history, art criticism and art studio. These two and one half days provided input for the majority of the participants, except for the discussions following each paper. The days following the twelve initial papers were taken up with intensive small group discussions, utilizing the specialists as consultants. These discussions focused on specific research and curriculum development proposals which had been prepared by the participants in the months prior to the seminar. The specialists also provided individual consultation for each of the participants in the form of criticism and assistance in further developing the proposals. The participants reconsidered their initial proposals in light of the group and individual criticisms.

Following these meetings, the specialists interacted as a panel on the concerns of art education and still later presented individual summary statements in which some of the main concerns of the seminar were reconsidered. A comprehensive evaluation of the seminar was presented by Dr. Asahel Woodruff.

The second week opened with three papers on various approaches to research. The first was oriented toward philosophical research, the second toward empirical research, and the third toward curriculum research. These specialists served as consultants and critics of the various participants' proposals in terms of research design. The research specialists presented a comprehensive criticism of the seminar and of research in art education. During the final days, each art education participant presented a final report of his revised research proposal to the entire seminar and of research in art education.

At the last session, brief statements of evaluation were presented by Dr. Woodruff, Dr. Hoffa, Dr. Dorn and Dr. Mattil.

The seminar structure attempted to match input and output, group and individual work. Every participant was both listener and speaker, individual worker and group worker. Everyone criticized and was criticized. The frequent change of pace made the ten days of intensive day and evening work not only tolerable and profitable, but highly enjoyable.

The wealth of material that follows in this report promises to have a significant impact on research and curriculum development in art education. It has been reported here as accurately and as fully as possible. In a report of this size, errors are sure to occur -- apologies in advance!

PHILOSOPHIC INQUIRY INTO EDUCATION IN THE ARTS

FRANCIS T. VILLEMAIN
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Philosophizing in the preface to a learned treatise, during the opening meeting of a course, or at the outset of a scholarly conference is an honored practice for many scholars if the deliberations that follow are uncontaminated by philosophic considerations. Such philosophic excursions are used as a prelude to inquiry. Like shaking hands and saying "How do you do?," the philosophizing is an academic ritual. It is not an undertaking calculated to influence significantly the character or course of the ensuing deliberations. I call attention to this function, which professional philosophers are often asked to perform, not because I seek an appointment as a high priest of scholarly rituals. Rather it is because I wish to show that the identification of the ritual with philosophy is symptomatic of a mistaken view of the philosophic enterprise; one that is injurious to both philosophy and other modes of reflection. It is my contention that philosophizing, properly conducted, can prove to be of substantial assistance in curriculum development and research in the arts.

While this conclusion might be expected to receive general endorsement among philosophers of education, it should be noted that the phrase "properly conducted" harbors philosophic issues. "Properly conducted" suggests that there are standards for appraising philosophic practice. While this is true, it is also the case that all criteria of philosophic adequacy are not universally agreed upon. In what follows I shall set forth some widely endorsed philosophic practices and suggest others that are clearly partisan.

I. Canons of Intelligibility and the Problem of Defining "Art Education"

One of the most prominent and historically persistent notions about philosophy holds that philosophy plays a foundational role in every domain of knowledge, that no field of human reflection should escape a philosophic leavening influence. There is considerable merit to this view although certain interpretations pose insurmountable difficulties for some of us.

Typically, philosophers examine all ranges of human reflection with a view to formulating generally applicable standards of excellence and identifying defective patterns of reasoning. Consider an example. A painter may name certain color relations as in a state of tension; a physicist will call a rubber band extended between one's fingers as in a state of tension; and a psychiatrist will diagnose a patient's behavior as one of tension. Without any pretension as to mastery of the separate spheres of knowledge of each of the men involved, philosophers are prone to point out that the term "tension" is being used in three different ways and the word "state" as used in connection with behavior and things, upon inspection, may be conveying more than one meaning.

The import is at least twofold. The logical canon of intelligibility at minimum requires recognition that a word may be used to designate differing matters and that we be clear as to which usage is being employed on any given occasion. Thus, a psychiatrist who concludes that his patient has overcome his tension is not saying that the patient is incapable of apprehending or constructing whatever color relationships painters may wish to call tension relationships. But the several meanings of "tension" could lead to mistakes. Thus, ambiguity in thought, confusing differing usages for a word with one another, is identified as a possible error in any domain of thought.

Analysis of the conceptual circumstances that produce the multiplicity of usages for a term has led to a second finding. It is generally recognized that a given word, phrase or concept gains its cognitive status by virtue of its connections with other words and phrases. This phenomenon is readily apparent in the sciences wherein precise word usages are developed by means of a system of statements, definitions, concepts, explanations, laws, postulates and the like. This is suggested by the example of "tension" where differing meanings are the product of differing contexts or systems. Thus the concept "social class" is not part of the cluster of meanings in which we find "osmosis." The latter with its context of ideas is not encompassed by "target pricing" and its related ideas of "sales," monopoly "oligopoly," about which Heilbroner says "We shall call this new kind of market situation oligopoly meaning a market shared by few sellers."[1]

Efforts to frame intelligible questions and to conduct rigorous inquiry would then seem to require the critical adoption of the system of meanings to be employed. Not any set of meanings, or what has come to be known as a "universe of discourse," is appropriate for establishing and explicating the meaning of the word "tension" as used by painters. Indeed confusion ensues when the characterization of a particular painter's color tension is undertaken with such terms from the universe of discourse of physics as "molecular structure," and "wave length." In this instance, precision and rigor is lost rather than obtained by the meaning system of physics.

Let us suppose that a study of children's capacity for art appreciation is to be undertaken and that for the purposes of empirical research the phrase "art appreciation" is defined as "the osmosis of sensory propositions." If "osmosis" is used to refer to the movement of a fluid through porous material; "sensory," to refer to physiologically describable conditions of the nervous system; and "proposition" to a particular sort of sentence, what measure of intelligibility can one find for an alleged definition of "art appreciation" in which these words are juxtaposed? There is no such measure and for at least one simple reason: the effort to delineate an empirical subject matter for study fails because there is no system of meanings which relates the terms and their references to each other--the terms gain their status in alternative universes of discourse. It simply makes no cognitive sense to talk about "art appreciation" as "the osmosis of propositions by neural structures."

While this definition of art is comically absurd, I am inclined to believe the intellectual violation that yields its nonsense character may be more widespread than generally recognized. Accordingly, I urge that meticulous attention be given to definitions of "art" that purport to delineate a body of determinate subject matter with a view to sifting out those that may appear to be intelligible but which, in fact, are nothing more than a grammatical amalgam of terms from unrelated universes of discourse. If my suspicion is correct, then the grinding of intellectual gears that results from criss-crossing universes of discourse is, to extend the metaphor, impeding the forward movement of research in art education.

Having brought up the matter of definitions, two further philosophic considerations about them might well be set forth in connection with stipulations for the usage of the word "art." In so doing I can further demonstrate additional relationships between philosophic thought and other modes of inquiry, and by way of application, note certain difficulties that may be encountered in thought about art education.

It is common knowledge that philosophers from Socrates to Russell and Dewey have struggled over questions concerning the nature of values, their sources and basis for adoption or repudiation. However, it is not generally recognized outside philosophic and other academic circles that modern philosophy has been more preoccupied with such matters than in any other period. As a result we now have a greatly expanded and sophisticated range of distinctions, issues, and conceptions about values, their status in thought and about procedures for conducting investigations into values. Indeed, a future historian of philosophy may need a Univac to encompass and sort the array of notions that have been set down.

In one form or another the ancient distinction and sometimes dichotomy between fact and value, the descriptive and the normative, non-ethical and the ethical, has withstood this new scrutiny and, by and large, remains as a basic tool for philosophical analysis. What has been emphasized in current thought is the contention that given sentences, utterances, and phrases are sometimes used to report-describe, to evaluate-prescribe, and to do both at once. While there is considerable agreement about this, it is coupled to great disputes about the proper procedure for assessing assessments and to questions about whether there is any reputable intellectual status for the value dimension of language. However that may be, it is generally argued that confusion follows the failure to distinguish between the reportative-descriptive from the prescriptive-ethical usages whether they are joined, separated, held constant or shifted from one moment or context to the other.

Typically, "art" is used in a commendatory or honorific sense. For example, it might be said that "art is experience in its most complete and exquisite form." Having advanced this positive sentiment, it is not unusual to find someone going on to declare that "art experiences should be carefully evaluated with a view to avoiding trivial and stultifying ones and to obtaining those which are exhilarating and conducive to refinement." Having employed these two usages of "art," one value-laden and the other a label for something subject to both positive and negative appraisals, what are we to make of the statement "That was an art experience!" if it were to be uttered by the same person? Without substantial qualification we would not know what was intended and one might properly suspect the presence of muddled thinking. The most generous interpretation might be that the person both identified and commended an experience but since "art" is used in more than one way we are left at best with ambiguity.

A lesson to be drawn from this analysis is that definitions, rather than always being value-free resolutions for ward usage, are capable of advancing someone's ideas about human adequacy.[2] Surely nothing can be more clear than the fact that estimates of what is valued and disvalued are matters of controversy--and I am tempted to add--most particularly in discourse about the arts.

Such varied ways of using the term "art" tends to produce a Tower of Babel sort of situation in the literature about education in art. This confusion can be avoided by clearly distinguishing between descriptive and normative usages of "art," between normative usages that rest upon differing valuations, and by keeping track of shifts in usages when they occur.

Maintaining clarity at this point rather than eliminating all problems introduces still another and more difficult one than that of avoiding confusion. The above example of a definition of "art" displays the problem. Definitions, rules or language habits that govern the usage of the word "art" rather than always being value free often incorporate a contestable stand about what is valued-disvalued.[3] So, while one can be clear about which value-grounded definition of "art" is being used, a problem arises when questions are put about the bases for selecting and rejecting among alternative preference systems conveyed by competing definitions of art. Establishing the reasonableness of a choice between these preferences is surely one of the great unresolved issues in the arts. Since estimates of what is to be approved and disapproved in the arts, and in every other area of experience, have and continue to be matters of fundamental controversy among our ablest thinkers, value laden usages of "art" may meet standards of intelligibility but not gain widespread acceptability.

When the educational setting becomes the arena in which competing value grounded delineations of the scope and content of art education are at work, the problem grows. Without agreements as to procedures to be followed or criteria to be met for establishing value judgments in the arts, normative definitions of "art" can be expected to circumscribe incompatible ranges of curriculum practices, subject matters and aims. Following the custom of using "art" with a normative cast will then secure little or no substantial agreement as to what education in art comprises. From conflicting normative claims that make of education quite differing affairs, whether motivated by generosity or frustration, one cannot make a logical leap to the conclusion that it is all art education for to do so is to slip into another meaning of the phrase. The shift occurs when the word "all" is introduced. If each contestable range is to be included in the reference for the phrase "art education," then the competing value-based conceptions of art education are being set aside in favor of a usage that encompasses at least everything to which normative-based definitions make reference. And there is no logical rule that permits one to extract from contrary propositions a proposition that includes all the conflicting claims of the contraries--except, of course, in an Orwellean nightmare world of doublethink.

Normative definitions of "art" and "art education" present at least two pedagogical difficulties. Given the present state of value theory we are not able to obtain sweeping agreement as to what practices, procedures and aims will constitute the field. And it is fairly evident, and hence not argued here, that neither intellectual anarchy nor the official elevation of one value grounded definition will do.

There is a second and quite biased criticism of ethically based usages of "art" and "art education." All such formulations when implemented curtail what is being made available to students and predetermine the criteria of adequacy that they will use and the goals to be sought. The resulting aesthetic indoctrination runs counter to the value which holds that whatever else art education involves it should at least encourage the young to explore all manner of arrangements and practices with a view to helping them to cultivate the ability to assess and formulate their own conclusions. But this is not to suggest that only such educational practices in the arts is really art education. If that were the case, the educational activity would not provide children with the opportunity to reject critical practice. In addition, if art education were restricted to critical practice, it would disallow indoctrination as a live education option for use in the schools, which is hardly the case. As George Counts likes to point out "education is one of man's greatest inventions for the perpetration of ignorance." So viewed, education is an affair of many, many kinds and most assuredly comprising subject matter for assessment. There is nothing inherently good about it. And so with education in the arts. Whether of the indoctrinating order or that which releases perception and assessment, it is well to adopt a conception that encompasses both. Such a definition will delineate, if only in a gross fashion, a range of orderings and subject matters to be appraised. This is to recommend that a descriptive or value free conception of "art education" be fashioned. To do so neatly circumvents the dead end route of trying to obtain a consensus about what is of worth as the basis of a normative definition of the field. It also has the merit of leaving open for continuing discussion the question as to what is better or worse therein.

Hopefully these strictures and philosophic critiques will serve to chasten and thereby advance the corrigibility and intelligibility of the term "art" in educational circles. If so, they may also prove to be of help in assessing the current cognitive status of such words as "creative," "imaginative" and "expressive." Like "art" they too are widely employed as commendatory terms and hence are purveyors of normative content. The legitimacy of so doing may be seen as questionable when we consider the utterly unacceptable instances of conduct which are subsumed in at least part of the meanings of these terms. Consider the pathological behavior that is extraordinarily inventive in behalf of self mutilation, the awesome originality that produced the ovens at Dachau, or indeed Hitler's success in giving "expression" on an intercontinental scale to his personal dynamics.

Creative, imaginative or expressive activity is not to be exempted from assessments. Since such activity may be a source of both precious and degenerate consequences, it deserves to be made the object of the most searching critical attention that can be given. Therefore, as matters now stand, it would appear that these terms are not appropriate for unqualified use in locating goals or criteria of adequacy in art education. Yet this is one of their major roles. And a terminological jungle is entered when commendatory usages of these words are conjoined as in the case of "creative art" or "expressive art." Nothing less than a Mephistophelean visitation can explain their presence among art educators.

The discussion up to this point has been a demonstration, however frail, of critical-analytic philosophic practice in connection with the sphere of educational thought about education in the arts. Hopefully it has helped to indicate the worth of this sort of thinking for the field. In addition I may have succeeded in raising as a problem the task of determining with some precision what it is we research into or arrange into a curriculum design that can be called a program of art education. I should now like to show how there are alternative philosophic approaches to this problem and then proceed to offer a partisan appraisal of these roads and venture the outlines of what may be a satisfactory formulation of the domain of art education.

II. "Art" in the Context of Comprehensive Philosophic Outlooks

While professional philosophers are generally familiar with the 2000 year history of philosophic efforts to construct and justify a conception of art and to systematically work out related ideas, this body of thought has been generally neglected in educational circles. By and large the literature of education makes little or no use of the distinctions, issues and conceptions that have been set forth in philosophies of art. I suppose it might be argued that this is all very good indeed for educational practice is hampered by philosophic abstractions. The view finds critical reflection as an impediment to successful practice. Since such anti-intellectualism is so manifestly absurd, it needs no further attention here.

What then is the relevance of the literature of the philosophy of art to contemporary educators grappling with research and curriculum development? For one thing there has been evolved a number of conceptions of art that are woven into the fabric of comprehensive outlooks on knowledge, the cosmos, man's destiny, human nature and the nature and source of values. Such conceptions of art have an unusual status. Instead of floating in an intellectual void their assumptions and connections to other conceptions that loom large in philosophy have been explicated and critically appraised. Whatever one's judgment about their validity, they are at least monuments of conceptual elegance and examples of what mature cumulative thought produces given opportunity for prolonged, patient and critical analysis.

It is not my purpose to recount major features or accomplishments in the philosophy of art. However, I wish to draw samples from this literature in an effort to make a case in behalf of the claim that educational thought about the arts in education can be greatly improved if conducted in the light of this body of philosophic research.

Consider the idea, which enjoys considerable currency, that "paintings, musical compositions, sculpture and the like are a form of communication." Now if one places that statement in the context of ideas that holds "communication is an affair of sharing propositions," the upshot is the notion that a painting or a symphony conveys propositions. Architecture, poetry, literature and painting, it is asserted, are repositories of conceptual structures and are the instruments or vehicles by means of which the statement content is made available.

But change the ideational context of the "communication" doctrine to one which holds that communication can be an affair of shared feeling and the result will be at minimum that the work of art is an instrument for arousing feelings in the viewer that originally were experienced by the artist; and so we have the conception that holds art to be the objectification or symbolization of feeling.

Note what happens to the meaning of the term "expression" in each case. In the first instance, the rationalist tradition, expression in art is an affair of embodying a cognitive utterance in sculpture, dance, literature and the like. In the second instance, that of philosophic materialism or scientific realism, expression is an affair of fashioning materials and things that evoke certain feelings states.

It is apparent that the meaning of "communication" and "expression" is obtained in consort with the meanings of other terms and concepts. So intimate are these involvements that it is correct to say that given terms are largely meaningless in isolation from their philosophic contexts. And it is also clear that "expression," for example, as used in the rationalist account of art, is incomprehensible when thrust in the materialist account of art. And so it is with other terms that loom large in the philosophy of art such as "intuition," "truth," "pleasure" and so on. Each can have radically different meanings depending upon the philosophic context in which they are placed.

Consider the difficulties that occur when these matters are not understood. With the affirmation of differing philosophic perspectives people using the same words can talk past each other without having achieved a communication or perhaps much of any cognitive encounter. Or, given such philosophic innocence, one might use "reality" in the classical rationalist perspective to refer to thought, or ideas; that is to say if it exists then it is an idea in one form or another. Then one might go on to say that "art is an avenue to reality that gives an individual exquisite pleasure," and define pleasure in the materialist tradition as a physiologically describable condition of the body and a radically different sort of thing than sentences. The juxtaposition of a rationalist reference for "reality" with a materialist reference for "pleasure" violates the system of meanings of each persuasion and produces an unintelligible statement.

Perhaps a more sobering conceptual catastrophe occurs, when through philosophical innocence, definitions of "art" are made to flount deep ethical commitments. If, for example, it is held that the ultimate good for life is knowing His word and acting in accordance with it, one does violence to this doctrine if he proceeds to argue that the arts, as objectified pleasure, serve to provide children with those exquisite moments that are their own reward; those pleasures that are of inherent of intrinsic worth thereby requiring no justification beyond themselves.

So it is that value theory and theory of art may come together either to sustain or oppose each other. The historic systems of thought are not accidents but the consequence of the intellectual tradition that embraces the notion of consistency and hence of system. By and large Western philosophy has made criteria of human adequacy, in any domain, relevant to their conceptions of human nature and potentialities. If our nature is essentially an affair of thought, then art and its criteria of adequacy will deal with distinguishable traits of cognitive activity. If the final test of worth is taken to be a specificable state of the bio-physical-neural structure, then the proper task of art and art education will be of a radically different order. Furthermore, the great traditions in thought have critically placed their conceptions of the arts and the possible functions of the arts in a comprehensive account of the life worth living.[4]

The philosophic message here, a canon of intellectual adequacy, is to frame a conception of art that identifies subject matters to which, whatever their source, measures of excellence are applicable. Both a theory of value, a conception of what is what is not of worth and why, and a compatible theory of art are facets of the conceptual equipment educators require to competently confront research and curriculum development.

III. Inadequate Conceptions of "Art"

I have suggested that the definitions of "art" and "value" advanced in the philosophic literature are conceptual resources for educators. These are candidates adoption by art educators. They are viable alternatives, live options, available to the educational community. I now turn to these in a partisan frame of mind to see if they might satisfactorily serve as the theoretical, the cognitive foundations for research and curriculum development. The confines of this essay only permit an embarrassingly over-simplified presentation of the available doctrines. Since two major emphases or patterns of assumptions can be detected, I limit the discussion to their serviceability in the educational setting.

The philosophic perspective of rationalism or idealism explains the aesthetic experience as the apprehension of the thought, the propositional content, embodied or contained in a symphony, painting or poem. Thus to take from Guernica or the Parthenon, or what have you, the idea(s) it contains is the act of appreciation. And the task of the artist is to so embody the thought in his object that others may comprehend it. By definition, the term "art," whether used in connection with "appreciation," "experience," or "object" has to do with assertions, sentences, and propositions whose route of availability, by definition, differs from those found on this page or in the lecture hall. Basically artistic apprehension and construction is a cognitive enterprise differing from other cognitive enterprises by virtue of the material and sensory mode of conveying discursive knowledge.

It appropriately follows that the worth of things aesthetic has to do with the truth-falsity, significance-triviality, or generality-particularity of the content.

The notorious disputes among those who have obtained various messages from the same work of art suggest a serious limitation in this account. Apparently there are no criteria for determining whether or not one has successfully extracted the content. Indeed there is no specificable procedure to follow by means of which the content is obtained with the exception of intuition, and this route is shrouded in mystery. About the best that can be said is to intuit - but what one does is far from clear.

Part of the historic error of idealists' philosophies of art is that of paralleling the image of a container and thing contained with an art object and its content. What can idealists mean when they say that a sentence is in a painting? Certainly not the same thing as when we say a sentence can be found in a book. Here we mean by "in" that a particular sentence is written or printed on a page of a given book; and it is an assertion that can be empirically tested. But if "in a painting" does not mean for the idealists that the sentence is written out on the canvas, what it does mean is not clear. Perhaps it is like the phrase "an idea in my head" which is certainly not intended to convey to the neurologist that somewhere in the cranium savity he can find the idea written down. Such a phrase is regularly used as a substitute for "I am thinking an idea" or "I am now reflecting upon a statement." If this is the case, then the language that describes the manipulation and characteristics of language is appropriate for providing an account of what transpires and not the words and concepts of physics and physiology that deal with other subject matters. So, to erect the characteristics of one distinguishable subject matter as generic to all subject matters and then proceed to ascribe these traits to a subject matter that does not display them is to commit the error of criss-crossing universes of discourse. Idealism has for centuries committed this fallacy and on a cosmic scale. This occurs when idealists take the attributes of cognitive deliberation and read them into the universe; typically they assert that all of reality is mental and the object of an eternal thought. Here is anthropomorphism being confused with knowledge; while it is delightful and fitting for novels and children's stories where conscious make believe, pretending, is so intriguing, it is out of place when we are trying to formulate testable knowledge.

But if idealists simply mean by the phrase "in the art object" something like "in my head," they are still wrong. While it is most assuredly true that an opera or a novel can convey in discursive thought things that can be described with words like "predicate," "subject" and "copula," this is not the sort of terminology that describes what is conveyed by a Beethoven symphony or a Marini horse. What would deal with the latter is the shop talk of the artist that makes use of such words as "chord," "tempo," "spacial volume," and "texture." In sum the discourse that describes and appraises discursive discourse though critically important, and overwhelmingly so to professional philosophers, does not subsume all other universes of discourse and their varying subject matters.

I might add as a parenthetical observation, that there appears to be a considerable temptation among educators to try to get the arts to fit into the categories of theories of cognitive learning. This is to fall into the idealist's error, for it assumes that the "structure of knowledge," the attributes of discursive thought, exhaustively account for human experience. It may be that the motivation for this stems from the desire to obtain for the arts the honored status now enjoyed by knowing. While the objective may be sound, the conceptual means are not calculated to gain the end.

If these logical niceties are not sufficiently persuasive, perhaps the educational question to idealist philosophies of art may turn the trick. If we adopt the idealist ideas about art what do we put into the curriculum? If the answer is, "art objects that express inconsequential and important truths and others that convey false ideas so that children can come to know about them all," I submit that teachers would be at a loss as to what to do. Does one not play "I've Been Working on the Railroad?" Does one hang El Greco's Toledo but not Picasso's Les Demoiselles d'Avignon? Does one read Steinbeck's Cannery Row but not Shakespeare's Hamlet? To repeat, since truth and falsity are attributes of assertions, and not attributes of any and all other subject matters, we are left without criteria for selecting and rejecting material for the art curriculum.

And if we press the pedagogical problem further, one can readily see that grave difficulties are encountered if one fully accepts the idealist doctrine of reality. If the ultimate, complete reality is an infinite mind and this is the source and locus of the ultimate good for man, then it would seem that art education for idealists has no less a goal than helping children to come to know and follow the thinking of a World Mind. If the first and fourteenth amendments of the United States Constitution are not enough to discourage this view, I would add another consideration. Whatever conceptual foundation we employ for public education in a civilization that requires its public institutions to be responsible to the public, these foundations will have to be susceptible to a public mode of warrantability. Anything less than a common procedure for determining the soundness of educational directives is to limit the potential public scrutiny and hence the public's authority. And the only form of knowledge that meets this test is that of empirical science. So while it may be a self-evident truth to idealist's that the "reality of the world is the object of an eternal thought" the statement does not meet the criterion of acceptability for use in giving direction to the public institutions of a sovereign people.

Consider a second major alternative to idealism. In the materialist account of art, as we have seen, the act of appreciation is construed as an empirically describable sensory excitation secured by means of a poem, cantata, dance or the like. The latter is held to be, to use Santayana's phrase, the "objectification" or for Langer the "symbolization" of the artist's feelings. In both cases where "art" appears, the word "feeling" is pivotal and in the literature of this perspective "sensation" and "emotion" are also found with regularity. Whether the feelings are to be qualified by being Christian, felicitous, Marxist, formed, or English the point remains that art is being used to refer to something that is primarily an affair of the physiological structure of the homo sapiens and whatever it takes to somehow record and produce the physiologically describable condition named "feeling" or "sensation."

The classical error of materialisms is a specie of the one committed by idealisms. Like idealism they tend to subsume under one universe of discourse all other universes of discourse and their respective subject matters. One cardinal difference is that materialism adopts physics as the umbrella discipline. The upshot is that their account of art must, due to a physics definition of what is really real, be about something physics and its related disciplines of physiology and neurology can deal with empirically. Anything less tends to be suspect; witness materialism's uneasiness with generalizations (fictions). So it is that "feeling" can be a trusted word and can properly identify what art is all about.

Materialism, in classical or modern dress, because of the self-imposed limitations of its basic categories and terms, fails to distinguish between some empirically necessary conditions for the occurrence of artistic construction or contemplation with the distinctive thing that is secured as a consequence of the presence of certain necessary conditions.

Materialists would probably agree that it is foolish to describe a logician's syllogism with the language of neurology. However, they seem to think it not erroneous to describe artists' products with words that cannot discriminate between having, for example, a pizzicato musical phrase and the electronic and chemical state of the central nervous system that permits us to have the music. In a word, resorting to the single universe of discourse of physics to establish a reference for "art" reaps the charge of reductionism. The error consists in asserting that a description of the necessary conditions for the occurrence of an X is also a description of the uniqueness that is secured as a consequence of its necessary conditions.

As a conceptual schema for educators, materialism is wanting. The most thorough going and empirical count of the chemical, molecular, neuro-electronic properties of our nervous systems or the physical properties of paintings, architecture, and heroic couplets will not help us to select and organize a curriculum or evaluate students' practices. Indeed, using the notion of "objectified" or "symbolized feeling" one might well appropriate for a program of art education Einstein's theory of relativity, Aristotle's doctrine of catharsis, multiplication tables or the United States Senate. With their doctrine such things might be taken as examples of "objectified pleasure." Surely these things are not proper curriculum materials for art education, even for the materialists; but their conception does not rule them out. Its defectiveness for dealing with curriculum problems is momentous.

When the educational procedure or method question is rasied, the concepted of art as an affair of feeling has nothing to offer pedagogues. This is one of the most severe limitations of the doctrine for educators are incapacitated if they have no procedures to follow; no methods to order their practice in regard to such things as color tension, space movements, overlapping planes, flying buttresses, Gothic architecture, or action painting. If these are typical of the "stuff," the materials, the content, the subject matter, some of the means of the field, then no account provided by physiology is capable of locating rules for governing their manipulation and relationships. Why? First of all because physiology and its related universes of discourse cannot direct our attention to these subject matters since their nomenclature and terminology deals with other things. Indeed, when used, these bodies of language mis-direct attention; for they make reference to necessary conditions of art rather than to the matters of focal concern. Secondly, the discourse of physics, neurology and physiology are not appropriate for framing, describing and assessing policies, prescriptions or methods whether those of logic and grammar or those of an art educator. Such discourse cannot issue into or evaluate rules for directing teachers' conduct. For example, with the discourse of neurology we cannot assess completing procedural directives such as: "Compare examples of expressionism, dadism, and cubism so that children will understand how the differing modes, traditions, or styles, can be used to regulate their own or others painting;" "Do not expose children to historic painting styles until the have achieved a style of their own."

In the field of concern of art education is composed of feelings as defined by physiology, then consistency demands that criteria of criticism make reference to varying properties of the organism such as its temperature and its chemical and electronic state. Such criteria are worthless to educators and students attempting to determine whether sculptural embellishments on a Romanesque cathedral are delicate or ponderous, whether Op art has or has not extended visual media, whether flatware is flamboyant or pristine, or whether a Klein painting has offered us anything fresh and new in color relationships. Empirical descriptions of our biological structure cannot provide us with bases for determining whether it is appropriate or not to replace the present entrance way to the Seagram's Building with a classical Greek doorway. Just as standards of adequacy in logical deal with various possible relationships between assertions and terms, so it is with aesthetic criticism; standards of artistic worth are pedagogically relative if they call students' attention to the means and ends of art, so ably identified by artist's shop talk and in the writings of critics and art historians.

Even if it could be shown how specific sensory states are "mirrored" or "correspond to" a Colima dog, a Rubens nude, a Brancusi bird or a Fuller dome (or even valid and invalid syllogisms), one wonders what might be gained, if anything. Perhaps the futility of trying to show how a true statement "corresponds" to its object while a false one does not, an epistemological problem over which so many struggled for so long without much success, might serve as a lesson in the philosophy of art.

IV. Education in the Arts As the Cultivation of Qualitative Intelligence

Perhaps I can partially redeem myself for the misrepresentation that may have resulted from my oversimplified versions of idealism and materialism. In my effort to advance a conception of art, responsible to what I think preoccupies artists and critics as well as educationally relevant, I should like to draw upon an insight from each of these philosophies. In what follows I do not pretend to have found a compromise satisfactory to each outlook. Not at all, for the twist given to their ideas runs counter to their conceptual structures. What I have to propose is not a Hegalian synthesis because the critiques advanced above are not withdrawn.

While materialists, in the main, talk right past the matters of primary attention for professional artists and educated observers of their work, materialists occasionally use "feeling" in a non-materialist sense. When they and others of us talk of feeling "remorse," "angry," "sympathetic," or "annoyed," (the latter due to the cavalier treatment meted out above?) I do not think that a reference to some bio-physio-neurologically describable state of affairs is intended. Rather it appears that "feeling" is being employed to make reference to what might well be called attitudes, moods, or states. In more general terms, these matters are correctly described as distinguishable modes of conducting oneself in relation to certain situations, persons, things, and the like. If this is correct, then "feeling" is being used to talk about distinguishable patterns of conduct, behavior, or acting. Similarly when we speak of the "feelings provided by a painting" I think we are often, though not always, signifying that a person went through the experience of such things as color tension, plastic movements, cubism, muddy color, and not what these may have produced in the neural structure. Strictly speaking, having the experience of color tension might be noting cerulean blue on the roof of a house in the foreground of a painting, in relation to its presence on a mountain in the background, thus also helping to provide the experience of a flat canvas. The feeling of a cubist painting would thus be in part the apprehending of overlapping planes and their movements in shallow space. Comprehending the interplay of highlights, texture and volumes is to "feel" sculpture.

The feeling provided by works of art in this account are performances, acts of re-instituting relationships originally worked out by artists. In this use of "feeling" (and it is hardly the only one to be found), ordered or patterned practicings, conduct or activity is being talked about. And rather than being haphazard or accidental it is re-orderable, re-institutable behavior. Thus to talk of having experienced pointillism, Motherwell's style, Lehmbruck elongations or the gay mood of a Matisse mural is to make reference to a trait common to achieved and re-obtainable activity. These achieved or potential havings are determinate, substantive differentiations of phases of ordered conduct established by artists and capable of being talked about in thoroughly empirical terms, although our language falls short of signifying the spectrum of possibilities. They may be ethereal for the universe of discourse of physics but they are as empirical as the subject matter of logicians.

If "art" is used to refer to these ordered practicings, to these regulated processes, then there is no need to clutter up the conception with the superfluous baggage of reductionism. Nor do we need to perpetuate the fiction of inner and outer orders of existence that ensnares us in unresolvable quarrels over whether art falls into one or the other or both. To insure the circumvention of such blunders, and hopefully to obtain precision, it seems advisable to abandon the ambiguous term "feeling" with all its attending ambivalences, when we set forth an educationally vital and empirical account of art.

What is needed then is a formulation that represents whatever traits are common to the host of substantive practicings to which I have alluded by means of several examples. And it is at this point that I find valuable a dimension of the rationalists' tradition. Their conception of the life of mind as an affair of disciplining, of forming in accordance with deliberately selected rules and finding this sort of affair as the distinguishing character of the human, is, I submit, relevant to the construction of an educationally pertinent conception of art. I wish to propose that such terms as "minding," "thinking" and "intelligence" can and deserve to be salvaged. With certain revisions in their meaning they may be incorporated into an empirical and educationally significant conception of art. I shall attempt to show how this can be done by means of a brief examination of the phrase "critical thinking."

Probably the most widely accepted view of "critical thinking" holds it to be a phrase which refers to cognitive discourse that is governed by an approved set of rules. C. D. Hardie, for example, offers an analysis of thinking which construes it to be "verbal behavior where the symbolic expressions are manipulated according to certain rules."[5] This is to be taken as including "both deductive and inductive thinking as forms of verbal behavior."[6] So viewed, thinking is the manipulation of the signs and symbols of mathematics, philosophy, sociology and the like--the materials of discursive knowledge. This joining, manipulating, expanding and revising becomes critical as distinguished from uncritical when it complies with certain formal properties.

Quarrels among the adherents of this view develop when formal properties are advanced. There is considerable disagreement as to whether or not certain of the rules and prescriptions are applicable or appropriate. When pressed, there are those who would say that the linquistic constructions (the books and articles) of their distinquished colleagues in philosophy and educational philosophy are not really "critical" (although impressive) because the discourse does not comply with the procedures of empirical inquiry. Among the unflattering labels used for such discourse are: untestable, non-sense, and vacuous--in sum, uncritical.

Those so opposed find such charges less than impressive and at least somewhat uncritical since the reasoning that stands behind them does not encompass compliance with a set of assertions, rules of a sort, not subject to warrant by empirical procedures. Jacques Maritain in arguing in behalf of "genuine certainties" says:

> These certainties which arise spontaneously in the mind when we first come to the use of reason are thus the work of nature in us, and may therefore be called an endowment of nature, as proceeding from the natural perception, consent, instinct, or natural sense of intellect. Since their source is human nature itself, they will be found in all men alike; in other words, they are common to all men. They may therefore be said to belong to the common perception, consent or instinct, or to the common sense of mankind. . . All men, unless spoiled by faulty education or by some intellectual vice, possess a natural certainty of these truths.[7]

It would appear to follow that constructing and relating of certain ideas when not regulated by such truths would be counted uncritical.

While substantial agreement can be obtained concerning the formal properties of implication and hence a measure of agreement as to what constitutes critical thinking, in the final analysis we simply do not have common standards for determining whether discursive thinking is genuinely or fully critical. These divergencies generate problems for pedagogues. Competing conceptions of "critical thinking" seem to lead their adherents to opposing goals for thinking done in the school setting, incompatible criteria for use in assessing thinking, and to opposing delineations of the conceptual structures that deserve to be incorporated in the curriculum.

I call attention to the difficulties surrounding the term, "critical," then proceed to leave them, partly to invite attention which I think they deserve and partly to indicate the limitations of my remarks. I wish to address myself to what I construe to be defects in the conception of "critical thinking" mentioned above, and not to issues surrounding rules: the conception which holds "critical thinking" to signify the activity of ordering the signs and symbols of discursive knowledge in conformity with some set of endorsed formal properties that are uniquely appropriate to such discourse. Briefly put, my basic difficulty with this conception is that it unduly restricts the arena of subject matters to which the term can properly apply.

A novel alternative to this limited usage of "thinking" and "thought" was to my knowledge first advanced by John Dewey. In 1930, he published an article with the title, "Qualitative Thought,"[8] in which he offered the contention that thinking is association as far as the latter is controlled."[9] Since this is not limited to discursive discourse he is free to note that the associations that artists make between their primarily qualitative contents is a mode of thinking. Indeed the quality which controls "the thinking of the artist. . .is the logic of. . .qualitative thinking."[10] Four years later in his book, Art as Experience, he says:

> A painter must consciously undergo the effect of his every brush stroke or he will not be aware of what he is going and where his work is going. Moreover, he has to see each particular connection of doing and undergoing in relation to the whole he desires to produce. To apprehend such relations is to think, and is one of the most exacting modes of thought. . .To think effectively in terms of relations of qualities is as severe a demand upon thought as to think in terms of symbols, verbal and mathematical. Indeed, since words are easily manipulated in mechanical ways, the production of a work of genuine art probably demands more intelligence than does most of the so-called thinking that goes on among those who pride themselves on being "intellectuals."[11]

Fifteen years after the publication of Art as Experience a strikingly similar usage for the word, "thinking," is adopted by Gilbert Ryle in his brilliant book, The Concept of Mind. He says:

> Thinking or heeding what one is doing does not entail constantly or recurringly making intelligent prose moves. On the contrary, making intelligent prose moves is just one example among others of thinking or heeding what one is doing, since it is saying things, thinking what one is saying. It is one species, not the causal condition of heedful performance.[12]

Ryle's analysis of the thinking that goes on when one is engaged in "following" a tune or recognizing what "he hears" helps to expand our conception of the subject matter to which the term thinking can properly apply. Since it affectively counters traditional usage, I quote at some length.

> When then is it for a person to know a tune, that is to have learned and not forgotten it? It certainly does not entail his being able to tell its name, for it may have no name; and even if he gave it the wrong name, he might still be said to know the tune. Nor does it entail his being able to describe the tune in words, or write it out in musical notation, for few of us could do that, though most of us can recognize tunes. He need not even be able to hum or whistle the tune, thought if he can do so, he certainly knows the tune: and if he can hum or whistle plenty of other tunes, but cannot produce this one, even when prompted, we suspect that he does not know this tune. To describe him as knowing the tune is at the least to say that he is capable of recognizing it, when he hears it; and he will be said to recognize it, when he hears it, if he does any, some or all of the following things: if, after hearing a bar or two, he expects those bars to follow which do follow;

> if he does not erroneously expect the previous bars to be repeated; if he detects omissions or errors in the performance; if, after the music has been switched off for a few moments, he expects it to resume about where it does resume; if, when several people are whistling different tunes, he can pick out who is whistling this tune; if he can beat time correctly; if,he can accompany it by whistling or humming it in time and tune, and so on indefinitely.
>
> He need not, for example, be coupling with his hearing of the notes any silent or murmured prose-moves, or 'subsuming' what he hears 'under the concept of the tune.' Indeed, if he were told to think the thought of 'Lillibullero,' without producing, imagining or actually listening to the tune itself, he would say there was nothing left for him to think; and if he were told that the fact that he could recognize the tune, even though played in various ways in various situations, meant that he had a Concept, or Abstract Idea, of the tune, he would properly object that he could not think what it would be like to be considering or applying the Abstract Idea of 'Lillibullero,' unless this meant merely that he could recognize the tune, when he heard it, detect mistakes and omissions in it, hum snatches from it and so on.
>
> This enables us to reconsider what was said earlier, namely, that a person who recognizes what he hears is not only having auditory sensations, but is also thinking.[13]

Here are two substantial philosophic figures who find it appropriate to use the word, "thinking," to refer to those same patterned behavings to which artists' shop talk refer and to which a certain usage of "feeling" refers. They both find that the subject matters ordered are not solely the language of empirical discourse. They further agree that these aesthetic events display "heeding" or "doing and undergoing in relation to the whole." The extent to which the latter is interpreted to mean that these affairs are subject to regulation, that is to say that they comply with rules or formal properties appropriate to the means and ends being sought, then these thinkings may indeed be called critical.

If it is true that common to knowing and to what might well be called "arting" is the trait of being ordered, both allegedly submit to rules or forms that govern relatings and hence both affairs of thinking, what special character do they possess so that we can differentiate between them?

The rules or forms to which knowing submits are at minimum the familiar ones of logic and grammar, and for some of us, those we collect under the rubric of empirical science. But if we are clear about these formal properties of knowing, what, if any, are formal properties in the arts?

Artists, critics, and art historians in music, architecture, literature or painting gather together an array of cases and give to the group such names as Coptic, Cubism and Expressionism, or Baroque, Georgian, and California Ranch. These categories have something in common. They name a property presented by each of the cases falling into their sphere, a property that influenced the relationship established by the artist and which provides the instance with its overall distinguishable character. The schools, styles or traditions provide a format, and thus act in the role of a rule for both artist and non-artist alike. They perform in painting, architecture and the like the role performed by logical rules in knowing. And it is patently clear that given artists' fashion their unique modes or personal idioms which may be joined with forms shared with forms shared with others, thus we have Picasso's, Gris', and Braque's cubism.

The formal properties of artists are somehow or other very different from those found in a text in logic. What is the difference, say, between a syllogistic form and that of cubism? It is possible to present the syllogistic form

$$\begin{array}{l} \text{All M is P} \\ \underline{\text{All S is M}} \\ \text{All S is P} \end{array}$$

without also setting forth the content regulated by the form. However, if I was to present the cubist form I could not do so without the content it regulates. To present cubism is to also present a particular exemplicication. I can write about this phenomena with the language of discursive discourse but I cannot provide the form separated from a case of its use with such language nor can I provide an instance of cubist painting in a discursive discourse. This account of art asserts that nothing less than the painting can provide one with cubism. All I can here do is to make reference to cubism by means of the word "cubism."

Here then is a basis for differentiating cognitive from non-cognitive or artistic forms. Cognitive forms are separable from the methods they regulate while artistic forms are not.

If it makes sense to say that art is a specie of rule-governed behavior, a domain of thinking, then what is uncritical thinking therein? Uncritical artistic thinking, or, to use a phrase I prefer, "qualitative thinking," would then be those occasions in which forms appropriate to regulating aesthetic or qualitative subject matter are either not properly followed or else employed at inappropriate moments. For example, if a gentleman wishes to clothe himself in a fashion consistent with what is known as formal business attire, he does not introduce elements such as a Hawaiian sport shirt or patent leather shoes which would be appropriate to another clothing style. To shift the illustration, when designing a facade one cannot successfully employ Gothic style if a classical Greek doorway is featured. When listening to a Beethoven symphony, it would surely be uncritical to try to find the form of a waltz as the basic formal structure employed by Beethoven.

Given the popular usage of "feeling," "thinking," and "critical thinking" with all of the mischief they involve, it might be wise to abandom them all in favor of other terminology. While recognizing the encumbrances, I do believe that it is sound to talk about art as a specie of intelligence, where intelligence is used to refer to the process of methodologically ordering means to ends-in-view. So put, education in art is an affair of cultivating purposive activity in accordance with formal properties or methods; it is a deliberate effort to propagate intelligence in predominantly qualitative or aesthetic processes. In sum, art education is a field of educational activity in which the means and ends are primarily concerned with the development and refinement of qualitative intelligence.

One of the advantages of the conception of qualitative intelligence is that both cognitive and affective matters are construed as distinguishable aspects of a continuous process. Thus art and science, feeling and thinking, sensing and knowing are not erected as discreet existences. Rather, we have a formulation which holds that whenever intelligence is found both qualitative and cognitive practicings will be present. We have then a useful distinction and not a dichotomy. It can then be added that observations of instances of intelligence display varying emphases; for example, at this moment cognitive behavior is foremost and the qualities of the pose and diction while present remain in the background.

It follows that any program of curriculum development is amiss if it presumes crisply drawn compartments between aesthetic and cognitive studies. Since qualitative orderings permeate life and education, the problem is to devise ways of sustaining and expanding these practicings when they provide a background for cognitive activity and when they come to the foreground to be given focal treatment. While art educators do well to be preoccupied with the entire spectrum of qualitative ordering in the school their special curricula and research responsibilities fall into the latter area; but only as it is critically seen as utterly continuous with the qualitative practicings at work in the school and its societal setting. Anything less is to envision art classes in something like a monastic setting; a place cut off from the qualities present in other phases of school and community life; a point of view consistent with an assortment of dichotomies.

But which qualitative practices pervade both cognitively focal and qualitatively focal affairs, which specific qualitative and cognitive practicings help to sustain or hinder each other, when substantive instances of qualities can be introduced into the life of the young, and what constitute cumulative patterns of qualitative growth, we do not know as empirical fact. Without such knowledge we shall have to continue to operate from limited samples and haphazard but informed guesses; shooting from the hip as it were.

In sum the doctrine of qualitative intelligence does not resolve the curricula problem of determining which qualities are to be selected and rejected, which are to be reinforced, manipulated and moved toward still others. And this is the strength of the doctrine for it is not a value laden concept of "art." However, it does provide a partial platform for research into the value problem of determining worthy qualitative ends for art education for it broadly identifies the subject matter to be surveyed, the range of options or candidates for inclusion in the school and the society at large.

Here then is the great normative problem of art education. It is a task to which the distinctions and critical tools of philosophic thought need to be brought for it is one of the most difficult of value problems educators confront. Perhaps the first assault upon the problem is to recognize that the value problem of selecting the qualitative means and ends of art education is not one cut off from other major value problems of education and men. Indeed the view I would like to briefly advance is that the value problem of art education is continuous with the distinctive value orientation and problems of free men. There is, it appears to me, in the doctrine of democracy or freedom a point of purchase for grappling with the value judgments undergirding curriculum development in art education for American society in the latter part of the twentieth century.

Whatever else the ethical standard we know as democracy may include, it does at least say that the locus of ultimate worth for men is a form of associated living which fosters refinements and extensions for all, as determined by those involved. To date we have tended to regard as the items of supreme worth such things as our civil liberties, freedom from disease and poverty, and a complex range of political arrangements. However, we are as a society experiencing what Max Lerner aptly labels as a "revolution of access." I should like to think that this access means we may assume the presence of these historic ideals in increasing measure. If so, this suggests that a relocation of our societal ultimates is in order. And it is here that I find it appropriate to propose that our notions about freedom and democracy be amended to direct the revolution of access toward the most promising form of qualitative abundance we can imagine. Thus the democratic ethic is recast so as to hold that the province of final worth for a people to be the qualities of associated life they provide each other and evaluate together.

There is a danger here. Such remarks may be taken as incantations, as philosophic ritual. I hope they will not be construed as an expression of an inflated sense of importance. It seems to me imperative that scholars not make recommendations to the public about the ideals of a civilization that are not the best product of their inquiries. Theirs is a grave responsibility; one that attaches to their particular competencies to cope with these matters. So it is with considerable care that I suggest that American civilization has reached a point where it can and indeed should redirect its energies and resources in behalf of a cultural renaissance; in behalf of the fullest realization of the ennobling potentialities of our qualitative intelligences.

This social diagnosis is then presented to art educators as a basis for curriculum development and research. It offers a societal analysis as the grounds for determining what to place in the schools and what the schools should seek to obtain in the children and in the culture. The point of departure for curriculum development and research into education in the arts is the state and prospects of American society within its web of international relationships.[14]

If these my remarks are somewhere near the mark, then education in the several arts in the free society of the forthcoming era should be at the forefront of educational effort. In this position, and given the locus of worth as the quality that pervades the life of men, it becomes clear that art education can provide a specie of social criticism. To the extent that education in the arts is continuous with the quality of a civilization and that such education is a selection and reconstruction of the civilization's qualities, then aesthetic criticism fostered in the school setting is being addressed to the adequacy of the qualities of associated life. I take this to be a relatively fresh object of attention for comprehensive social valuation; it suggests that the criteria to be employed for sweeping social assessments should be aesthetic.

LIST OF REFERENCES

1. Robert L. Heilbroner, *The Making of Economic Society*, (Englewood Cliffs: Prentice-Hall, Inc., 1962), p. 132.

2. In this connection Israel Scheffler's discussion of definitions and in particular his ideas about "programatic definitions" will be found very useful. See Chapter I of his *The Language of Education* (Springfield, Illinois: Charles C. Thomas, 1960).

3. See W. B. Gallie, "Essentially Contested Concepts," *Aristotelian Society Proceedings*, LVI (1955-56).

4. Stephen Pepper makes all this amply clear in his *The Basis of Criticism in the Arts* (Cambridge: Harvard University Press, 1946).

5. C. D. Hardie, "Some Concepts in Education in the Light of Recent Philosophy," *Studies in Philosophy and Education*, II (Summer, 1962), p. 219.

6. C. D. Hardie, "Some Concepts in Education in the Light of Recent Philosophy," *Studies in Philosophy and Education*, II (Summer, 1962), p. 223.

7. Jacques Maritain, *An Introduction to Philosophy* (London: Sheed and Ward, 1932), pp. 134-135.

8. John Dewey, "Qualitative Thought," The Symposium, I (January, 1930) pp. 5-32. Reprinted in Philosophy and Civilization (New York: Minton, Balch and Company, 1931), pp. 93-116.

9. *Ibid*., p. 23.

10. *Ibid*., p. 103.

11. John Dewey, *Art as Experience* (New York: Minton, Balch & Co., 1934), pp. 45-46.

12. Gilbert Ryle, *The Concept of Mind* (New York: Barnes & Noble, Inc., 1949), p. 144.

13. *Ibid*., pp. 226-227.

14. Two recent contributions to this task are: Robert H. Beck's "The Social Background of Art Education," *Art Education*, ed. W. Reid Hastie, The Sixty-Fourth Yearbook of the National Society for the Study of Education, Part II (Chicago: University of Chicago Press, 1965); and Harry Broudy's *Aesthetic Education in a Technological Society: The Other Excuses for Art*, The First Annual School of Education Lecture (Ithaca: Cornell University, 1962).

RECOMMENDED READINGS

1. Virgil Aldrich, Philosophy of Art. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1965.
2. John Dewey, Art as Experience. New York: Minton, Blach and Co., 1934.
3. Ernest Nagel, The Structure of Science. New York: Harcourt Brace and World, Inc., 1961.
4. Stephen Pepper, The Bases of Criticism in the Arts. Cambridge: Harvard University Press, 1956.
5. Francis T. Villemain and Nathaniel L. Champlin, "Frontiers for an Experimentalist Philosophy of Education," The Antioch Review, Fall, 1965.

EXCERPTS FROM THE DISCUSSION WITH MR.VILLEMAIN

Audience: One of the things that you said was that the strength of the notion of qualitative intelligence was that it is not valuational. It does not suffer from a particular kind of bias concerning what good art is, and yet you are very concerned at the end of the paper with the improvement of the qualities of American civilization . Now, how are the criteria for improvement to be found within a conception of qualitative intelligence which is not valuational?

Mr. Villemain: I think I would simply argue that qualitative manipulation, qualitative ordering are going on wherever the homo sapien is found alive. It is merely reportorial as a term merely designates that this sordid behaving is present. The next and the most difficult of matters is to perceive to define some standards of conceptual adequacy for determining what constitutes a sound selection of these orderings, those which are to be made secure, those which are to be reinforced.It appears to me that qualitative abundance or dis-revolution of access ought to be directed to access in the qualitative area to an extent and to a dimension that we had not experienced as a civilization prior to this moment. I have my peculiar , biases as to what qualitative ventures we ought to pursue and reinforce. I would offer on another occasion with some length some defense as to how this might go on, how this might best be determined as to which qualities are to be affirmed and secured. Briefly put in, a sentence, I would argue at this point with John Dewey that the final criteria that we can turn to for deciding what qualitative manipulations are to be sought , secured, protected and furthered, all those which hold a promise of doing more of the same. That is, Dewey's proposition that there is no end for growth, save further growth, no end for education, save further education. At any given moment I would then have to be asking myself does this qualitative operation, do these orderings, does this aesthetic material hold the promise of further expansion of refinements within the domain of qualitative orderings? That , I think, is an empirical, a scientific judgement, as to whether they have this promise or not. I think the materialist would ultimately say that the expanding of adequacy has something to do with what makes a man feel pleasant as distinguished with what makes a man feel hurt. I would reject this hedonic calculus, and an alternative to it as the idealist would say that those aesthetic ventures, which move man ultimately to the highest levels of knowing which turn out to be one with the thinking of an infinite mind. I think that is where idealisms and materialisms ultimately go, and I close the alternative of what I think roughly comes out of the Deweyan frame of reference.

Audience: Does that conception of value reside outside of the notion of qualitative intelligence or inside?

Mr. Villemain: You pose the question in such a way that I have to adopt the inside or outside arrangement, and that doesn't reflect my philosophic outlook. I think I would simply say -- in other words, I am not permitting you to sift the philosophic granules for me. For my answer, I think I would want to argue that a theory of value has been upward in my thinking when I hammered out a theory of qualitative intelligence. In other words, my value has been that of providing a more secure place for the many arts in American education and civilization. With this value in mind, I have attempted to formulate a descriptive conception a value free conception , which would permit us in the world of the arts to more ably perform the assessing role that I think we perform whether we like to believe it or not. There is a value basis for hammering out the conception. I think the conception is essentially value free. It doesn't identify one set of qualitative operatings as better than another. It simply says they are there. I think that is what I am doing. You may find that I have not.

Audience: I would construe that to mean that it is outside.

Audience: It seems to me that this puts you in the same camp with the materialist and the same sort of criticism might be leveled . I am referring to the reductionist as you used in materialism, that materialists tend to reduce stipulation to its necessary condition -- physiological conditions in that case, -- and in your case it seems that you are reducing a context or situation to its qualitative dimension. Now, is this similiar reduction or is it reduction at all?

Mr. Villemain: I think it is not. I hope it is not. It seems to me again when we look at this shop talk, this phrase I think is somewhat apt, if we look at art shop talk when we talk about such things as overlapping planes it seems to me that what we are talking about is the educational subject matter that we are pre-occupied with. When I generalize and forget these high-level abstractings such as qualitative mediation, qualitative thinking qualitative intelligence, and work with such terms as these, it seems to me that what I am trying to do is to forget some labels which permit us to avoid these reductionisms and to honor the uniquenesses of the things we are struggling to help youngsters to work with and to, if you will, educate them in and through. So, I don't think I am involved in a reductionism. I would like to think that I have provided a conceptual schema here which is completely responsible to the things that art educators and people in literature and music are focally concerned with, the unique its, not the things that are the necessary conditions for the occurrence of these unique its.

Audience: In the distinction between the qualitative and theoretical it seems that you placed the values with the qualitative or the description of the subject matter of art and the field of art with the qualitative. If that is the case, it seems to me you are leaving out the cognitive or theoretical.

Mr. Villemain: I did not expand on it , but at one point I think I did in that instance I do think I did cover myself. Did I not, at one point say that these two kinds of thinking, the cognizing and the arting, if you will, are ever present in human affairs, wherever man is being purposive and deliberate, at this moment or any other moment. Before an easel or in a lecture hall, I think both are present. Now, it is a matter then of determining which you want on the front stage and which one will go in the background. At this moment, I think qualitative orderings which are present here in our gestures, intonations, in our costuming, our surroundings, these I think are in the background. In the foreground is the exchange of cognitive structure. So, I would want to argue that they are not discreet separate intities but rather interdependent and always inter-related and always mutually present rather than separated out and found in separate domains.

Audience: Clarify for us again the character of content of qualitative ordering and experience or aesthetic experience. If one critically beholds a painting, what is the content of such experience?

Mr. Villemain: I think I would answer that one can empirically identify the content and having so done, one can proceed to assessments.

Audience: Now, where are you locating content, what is the content of my experience? What do I have as a result of having this content?

Mr. Villemain: A combination of qualitative thoughts and cognitive thoughts. When you stand before the Guernica I cannot help but now recall a day every time I have gone to look at it I cannot help but recall a day I went down to the desk at the Museum of Modern Art and asked if they had any reproductions. The girl said yes but apologized for not having any of them in color. Now, I think you can understand why this stuck with me. Every time I go back and look at that Guernica, I recall this event. It sometimes gets in the way of my looking at the paintings though, but at such moments I am looking at a shallow canvas using some of the overlapping planes and the distortions for which Picasso and the Cubists were so famous; but I am also thinking of these other things, and I sometimes think about what happened at Guernica. So, I think what I have when I confront the Guernica are qualitative and cognitive thoughts. Now to proceed to evaluate those is, I think, a legitimate undertaking. I'm not sure I have answered though.

Audience: I'm not sure either but I have truth.

Mr. Villemain: In the idealist's account of art that is what you have. All falsity, depending upon what is present. Most idealists, in one form or another, would say that as I have suggested in this terribly oversimplified version here in this paper, which is not at all fair to them, they would have to argue that ~~the~~ art object conveys to you some sort of a statement, concept, a bit of discursive knowledge which can be assessed as either true or false, trivial or significant. Now, my reply to that claim was that I don't know how to find a statement in a painting or in a Beethovian symphony. I am literally at a loss to know what's there. Now, if I can tack on an observation, I think many people in art education resort to the term truth in connection with art appreciation and construction of an art object in order to try to bestow upon the arts the honorific status which now is obtained for the world of knowledge. I think this is a weak road to follow.

Audience: I wonder whether you would comment a little about shop talk in art teaching and what this means in terms of making sense in teaching.

Mr. Villemain: I hesitate because I suppose I have more respect for the shop talk of artists than I so the shop talk of teachers. Well, in a moment, in a terribly condensed fashion, it seems to me that if teachers had empirically worthwhile shop talk, it would be language which was entirely relevant to the qualitative and to the cognitive thinking that is going on by students and by teachers in the school setting. I think it would not be reductionist language, talking about neurological states of children or the physiological states of the teachers. It seems to me that it would be language that would deal with the pedagogical problem or ordering means to ends. This could be the means and ends both cognitive or theoretical or having to do with discursive knowledge and the means and ends that have to do with the qualitative orderings that are ever present in the classrooms whether in our classroom or in a mathematics classroom. In other words the shop talk of teachers ought ot be about the extension and refinement of cognitive and qualitative intelligences.

SOME PROBLEMS OF ART EDUCATION: A METHODOLOGICAL DEFINITION

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The judgment of a researcher as to which problematical matters in his field are worth researching does more than set the direction and scope of his intellectual energies. His sense of the problematic, when translated into the form of a research proposal, also reveals a measure of his knowledge of the relevant scholarly and scientific literature.

It is entirely possible for an art educator, for example, to investigate a problem which is a genuine problem--a puzzle--for him but which at the same time is not significant to the field of art education. This unhappy situation might arise, of course, if, contrary to his own judgment, his problem is judged to be trivial by his professional peers; that is, the problem is not funded or otherwise recognized and encouraged because they believe its solution would have little effect on conceptions and practices in the field. Still another reason for lack of professional support may be the art educator's failure to realize that his problem, or a problem very nearly like it or more basic to it, has been solved by empirical inquiry or resolved by conceptual analysis. Conversely, some matters of fact or value that he assumes to be indisputable may very well have been shown to be problematical. In either case one might be prompted to say, in the jargon of the graduate school, that he has failed to "survey the literature."

However, we might go one to ask ourselves some perplexing questions. What *is* the literature of art education? Just how would a survey of it help to identify significant problems in our field? What role should the judgment--the "expertise"--of professional peers play in this process? And more basically, what is an adequate conception of "problem" and how is a problem related to concepts in art education?

It seems to me that these questions are important ones to consider at an interdisciplinary conference whose purpose is to stimulate participants to attack significant problems in the area of curriculum development in art education. These questions are of moment because they may lead to answers which in turn may provide some of the guidelines, some specification of necessary conditions for significant research in our field. (Certain conditions have already been suggested by Professor Villemain. Besides offering us a conception of education in the arts as the cultivation of qualitative intelligence, he identified some "canons of intelligibility"--so crucial in a field of inquiry where several languages are spoken.) I am confident that other participants will also have much to say that is relevant to the formulation of answers to the questions I have just raised. I would like, however, to concentrate on the question of *what constitutes an adequate conception of a problem in art education*. I expect that if I am able to develop a satisfactory answer to this question I will at least have helped to illuminate if not to resolve the other questions.

I. The Problem of Identifying Significant Problems in Art Education

I would like to begin with a comparison that I think will illustrate a particular difficulty in art education and which will, perhaps, begin to clarify some of these initial questions. On the one hand, we might note that in each of the established disciplines of the physical and social sciences and in the humanities there is a collective sense of those matters that are secure as distinguished from those that are problematical, and, that therefore, require further research.[1] In sociology, for instance, the sociologist is generally aware of the "hard" knowledge in his field and has a grasp of those ideas relevant to his research problem.

In sharp contrast, on the other hand, is a field of inquiry as young as art education--young, if the field is taken in the terms of those who currently call themselves art educators. When art educators as a class are compared with sociologists, lawyers, anesthesiologists, or even clergymen, I think it is fair to say that art educators display little or no collective sense of what is problematical in their field. And small wonder. With such a dearth of established knowledge and coherent theory, with such a slight tradition of research and thus with no firm guide-lines for it, a researcher in the field understandably has difficulty in identifying significant problems that are the problems of art education and not the problems of philosophy, sociology, psychology, history, criticism, or art. (I don't mean to imply by this distinction that Messrs. Villemain, Tumin, Harris, Taylor, Rosenberg or Kaprow could not concern themselves with our problems--we have invited them here to do just that.)

Now, one plausible explanation of this difficulty is that art education is not a discipline: it is not a discipline because there are no significant problems in the field that cannot be reduced in principle to sub-problems in one or more of the disciplines of philosophy, psychology, sociology, and the like.[2] On this view, our task at this conference would be to try to identify these researchable sub-problems with the help of the specialists present representing these disciplines. Moreover, (the argument might continue), an awareness of what theories and ideas in these disciplines are considered to be problematical would in turn help us to decide what matters are to be taken as problematical in art education. Contrariwise, those theories and ideas not considered problematical in these disciplines we can take as not problematical in our field.

Let us test this alleged explanation with actual problems in several discipline to see what it explains. I would guess that no art educator present would take as problematical the belief that we learn by experience. (As good empiricists we might take as problematical various beliefs as to the kinds of art experiences and methods of teaching that would produce maximum learning; and we would go on to devise experiments involving test and control groups, and the like.) Some of us, if pressed, might refer to the historical doctrine of innate ideas or other pre-scientific beliefs as to how we learn as examples of mistaken beliefs. They are mistaken, we might argue, because they are not grounded in empirical evidence as is the belief that we learn by experience. We might go on to cite observed instances of a person learning something as evidence in support of this belief. What, then, are we to say in reply to the following argument?

> The belief that we can learn from experience is not certified by data given in experience. This belief can be warranted only by principles in virtue of which a proposition reporting experience can be evidence of, or render probable, other empirically testable propositions not implied by it. Therefore, principles sufficient to validate empirical inference must entail that experiences are connected, and, consequently, must be formulated in terms of, or presuppose modes of connection or unity. Such modes of connection or of unity are metaphysical categories and are kinds of synthesis in terms of which the philosopher interprets experience.[3]

To those of us who are tempted to provide a hasty rejoinder to Everett Nelson's argument (as outlined above), a word of caution is in order. The so-called "problem of induction" has been around for a long time and is still very much a live issue among philosophers of science.[4] Simply stated, the problem is: Does the justification of scientific conclusions which are established by inductive methods involve certain metaphysical *a priori* assumptions that constitution of nature? This problem arises when it is seen that an argument of the form "We learn by experience because, in fact, we learn by experiences E^1, E^2, E^3, . . . E^n" is circular; it begs the question. Nelson would avoid this circularity by appealing to non-empirical principles; e.g., the "connectedness" of experiences. Let me hasten to add that there are other proposed solutions to the problems of induction, seemingly equally plausible, which conclude that the methods and findings of science need not be certified by metaphysical principles.[5] This continuing debate accounts for the collective sense among philosophers of science of the problematical aspects of induction.

Must empirical researchers in art education take their inductive methods as problematical? I think not. For the empirical confirmation of beliefs about matters of fact need not involve non-empirical considerations in virtue of the meanings of these terms. Even if it does turn out that the "logical certification" of the principle of induction is a non-scientific task, then clearly the scientist as scientist need not concern himself with it. If he does, he is no longer working as a scientist. On the other hand, if it turns out that non-empirical justification is not involved, then obviously he need not be concerned as a scientist. A more partisan argument might cite the pragmatic maxim of Charles Peirce, a philosopher who was a practicing scientist. He went so far as to say that "In order to ascertain the meaning of an intellectual conception one should consider what practical consequences might conceivably result by necessity from the truth of that conception; and the sum of these consequences will constitute *the entire meaning of the conception*."[6] To paraphrase and apply Peirce: The proposition "We learn by experience" has a factual meaning if and only if assertion and denial of the proposition imply a conceptual difference capable of experiential test. A problem in metaphysics seemingly concerned with concepts of education--e.g., learning and experience--does not necessarily make educational propositions involving these concepts problematical.

Let us move now to examples of what is problematic in several of the sciences. These examples will seem perhaps a more relevant test of the idea that all researchable problems in art education are logically reducible to sub-problems in one or more of the established disciplines. Certainly worthy of examination in this regard is the research of Desmond Morris as reported in his book, *The Biology of Art*.[7] Is there an art teacher --or parent--who would not be struck by the amazing similarity between his experiences with children and the English zoologist's first attempt to get Congo, a one-and-a-half year old chimpanzee, to produce his first drawing?

> I held out the pencil. His curiosity led him towards it. Gently I placed his fingers around it and rested the point on the card. Then I let go. As I did so, he moved his arm a little and then stopped. He stared at the card. Something odd was coming out of the end of the pencil. It was Congo's first line. It wandered a short way and then stopped. Would it happen again? Yes, it did, and again, and again. Still staring at the card, Congo began to draw line after line and, as I watched, I noticed that he was beginning to concentrate the lines in one particular region--a part of the card where there was a small ink blot. This meant that, even in this very first scribble, Congo's lines were not just random scratchings and . . . he carried in him the germ, no matter how primitive, of visual patterning. (p. 22)

Art teachers would also be interested to know that Congo went on to fame and fortune: his paintings are now in many private collections (including Picasso's and Herbert Read's) and the London Zoo (his agent) has sold them for sizable sums. Moreover, he has received much popular attention from art critics and laymen, some of whom have compared his work to that of the Abstract Expressionists in order to denigrate Congo or the Expressionists or both.

At least one art historian has raised the question as to what new aesthetic criteria would be sufficient to sort out the differences. (In the work, that is, not the artists!)[8] In an attempt to find out, I made up a set of colored slides of Congo's paintings and mixed them up with slides of selected contemporary human paintings. I then had my class of undergraduate students not majoring art compare and discuss their formal aesthetic qualities. Needless to say, I was trying to get them to see some differences which were obvious to me, but with little luck. When I finally revealed the identity of the artists the reactions I got ranged from indignation and suppressed anger to such worldly-wise expressions as, "I knew all along that monkeys could do modern art."

But did Congo produce art? After all, Morris did conduct an experimental "study of the picture-making behavior of the great apes and its relationship to human art" (the sub-title of the book) in order to establish a set of biological principles of picture-making. Morris claims that "there appear to be only six principles which apply to picture-making as a whole and cover everything and everyone from Leonardo to Congo." They are: Self-rewarding Activation, Compositional Control, Calligraphic Differentiation, Thematic Variation, Optimum Heterogeneity, and Universal Imagery. Specifically, monkeys more frequently will choose cards with regular, rhythmic patterns that those with irregular ones; they will organize their pencil marks and lines into distinct shapes which over a period of time will show a slow process of pictorial growth; they can produce successive variations on a theme, e.g. a fan (split fan, centrally-spotted fan, curved fan, reversed fan, etc.); they show a distinct sense of when their drawings and paintings are aesthetically complete--they stop work. They will do all of these things without extrinsic rewards. It seems to me, on the basis of the visual, analytical and statistical evidence, that Congo and the thirty-two other infra-human primates have produced drawings and paintings that can be described as art.

Now it will occur to the art educator that a conception of art basic enough to indicate those aesthetic qualities that the drawings and paintings of apes, children and professional artists have in common may also help to distinguish their aesthetic differences.[9] It is precisely the aesthetic differences that would interest the art teacher because they are what culture--and, more specifically, the history and teaching of art--have produced. A biologist, in contrast, must try to neutralize of adjust for cultural differences in his subjects. Morris, for example, assures us that "In all cases the animals received no assistance or guidance from the experimenters, except for the provision of and . . . familiarization with the drawing and painting equipment." (p. 141) Morris does make some fascinating comparisons between non-human (unlearned and spontaneous art and the art of modern masters such as Klee, Miro and Dubuffet as well as the child art studies by Rhoda Kellogg. After all, his goal is to understand human art as a biological phenomenon. But if Morris sees the aesthetics of Leonardo and Congo as biologically linked, the art educator will surely see their aesthetics as separated by the enormous gulf that culture and evolution have created. The educational researcher wants to know (among other things) what methods of instruction will increase this gulf, as it were. It would seem that biological research and problems leave off where the art educator must begin.

If this view of the Biology of Art suggests that it is not substantively a part of art education research, it may be argued that the problems, concepts and research of psychology are. But to talk about psychology as if it were a unified, clearly definable discipline is misleading. So I would like to consider the research of Dale B. Harris as presented in his book, Children's Drawings as Measures of Intellectual Maturity.[10]

Harris's very substantial contribution to the field of psychological test and measurement, and, in particular, to the existing tests for general intelligence or cognitive ability in children, is his revision and extension of the non-verbal Goodenough Draw-a-Man-Test. As a by-product, he has also given art educators the most comprehensive review and analysis of the literature of children's drawings of which I am aware. He concludes from this survey that "The literature on children's drawings shows quite clearly that the nature and content of such drawings are dependent primarily upon intellectual development." (p. 68) He points out, however, that attempts to classify children's drawings were very crude until the work of Florence Goodenough. Her approach differed from previous investigators in the following respects:

> (1) No arbitrary decisions were made as to what constitutes intellectual merit in a drawing. (2) A double criterion for judging mental development--chronological age and school grade--was used as a basis for determining the validity of the test, and for establishing norms. Supplementary criteria were used when available. (3) Every effort was made to eliminate the subjective elements in judgments; each characteristic was defined as objectively as possible. (4) Artistic standards were entirely disregarded. (5) Standard subject matter and directions for drawing were chosen; but to allow as much freedom as possible in the working out of the task, no further specifications were made as to how the drawings should be done. (p. 68)

The task, of course, was to draw a man, and the 1926 edition of the test consisted of fifty-one points, each point to be scored for a specified body part or relationship of parts in the child's drawing. Harris extended the test to cover the adolescent years and validated seventy-three items as points on his new scale. He also paralleled this achievement with a Draw-a-Woman Scale of seventy-one points. Both tests were standardized on 2,975 children, representative of the occupational and geographical distribution of the United States. Harris also constructed and standardized a "Quality Scales," again, to evaluate, not artistic skill, but intellectual maturity as evidenced by proportion and inclusion and accuracy of detail. This scale is offered as an alternative wholistic method of scoring individual figure drawings, which is quicker but less accurate. He also obtained a drawing of the self from all the children in his study and produced a Guide for Analysis of Self Drawing, which is as yet untested empirically. Thus Harris was not professionally concerned with the aesthetic quality of children's drawings as evidence of artistic competence but rather with the content of these drawings as evidence of intellectual maturity.

Furthermore, it would appear from a survey of the literature that children's drawings may validly serve as evidence for hypotheses in a number of disciplines besides biology and psychology, e.g., psycho-analysis, sociology and anthropology. But, counter to those who would reduce the problems of art education to one or more of these disciplines, I shall advance and try to defend the idea that the problems attending the understanding and cultivation of aesthetic qualities in drawings and other art forms are--as perhaps no other problems are--the unique concern of the researcher in art education. In doing so, I shall not attempt to set arbitrary boundaries for the field; but rather I shall attempt to indicate what I take to be a legitimate focus and distinguishing features of art education research.

II. Various Meanings of 'Problem' and a Distinction Between Two Kinds of Problems

Thus far I have talked about the problems of research as though the nature of researchable problems were widely understood and agreed upon. Yet researchers themselves are not always clear about what they mean when they employ the word. On the contrary, I believe that there is enough confusion to warrant some attention to the various ways in which the word 'problem' is used--how it is used in ordinary language, in the specialized shoptalk of artists, and in my own theory of art.

Is there a problem with 'problem?' Yes and no. Native speakers have no trouble with the word in ordinary usage; it means more or less what the dictionary says it does: "A question proposed for solution; hence, a perplexing question, situation, or person."[11] The trouble comes when the word 'problem' appears outside of the context of ordinary language, especially in contexts where it is pressed into quasi-theoretical service. Consider some uses of 'problem' in current discourse.

The grandest use of 'problem' may be found in pronouncements that begin: "The problem of our age is. . .," "The eternal problems of mankind are. . .,""The problem of existence is. . .," "The problem of meaning is. . .," and so forth. The definite article 'the' tends to separate whatever 'problem' can mean in these phrases from human connections. Thus Platonically disembodied, one imagines that problems somehow exist whether ordinary people are aware of them or not. Traditionally, metaphysicians have fancied themselves especially favored in their ability to deal with such questions. ('Needs' and 'wants' are often hypostatized by educators in this manner; e.g. in the slogan, "We must meet the needs of children.") In contrast, the indefinite article 'a,' as in "A problem to be dealt with is. . ." suggests a more modest claim. It implies that there are several or many problems, but "Here is one problem. . ." But, then, one is prompted further to ask for more specific adjectives: "Whose problem? Do you mean your problem, his problem or their problem? Is it a problem you think I ought to have or a problem you would like to have?" Questions of this nature suggest that for the sake of clarity possession should be indicated in educational talk about problems. Witness the confusion resulting from talk about "the problem-child," or even "the child with problems." Is it the child who has, say, a problem about how to lose his hostility or agressiveness, or is it his teacher and parents who have this problem? It may be that quite different approaches are called for in dealing with problems once it is clear who has them, or wants them, or doesn't want them.

Still another theoretical confusion may be noted on this issue of possession. Ordinarily we say, "Little Mary has emotional problems," or even "Mary has psychological problems." More critically we might better say "Psychologists have psychological problems;" that is theoretical problems which are in the province of psychology. And one of these problems may concern the emotions of Mary. Other examples of what may be labelled misplaced abstractions are the following: John has economic problems (because at the moment he hasn't the price of admission to the movies); Sally has aesthetic problems (over the arrangement of her living room furniture); Fred has physiological problems (because he is too light for the varsity football team). It is apparent that these are not the problems that economists, aestheticians, and physiologists have--at least during working hours.

There is a further use of 'problem' which raises some special difficulties. This use may be illustrated by the following examples: The psychoanalyst uncovered the patient's deep-seated problems of guilt; Introspection revealed to Bill that his problem was one of social adjustment; The subconscious problem of modern society is anxiety. People commonly talk this way, at least since Freud; but we also find some educators saying "Let's discover what our real teaching problems are." One difficulty with this usage is that it seems to imply that a person can have problems of which he is unaware. Now it may be that a person after therapy may agree to, or choose to accept, the psychoanalyst's statement of a problem as his own. But then, it is possible that he may also reject it, or, after changing psychoanalysts, he may accept a contradictory statement as his problem. What is the empirical status of "his problem" prior to the patient's choice? How are competing statements to be scientifically resolved? How does one check? The answers to be found in the literature, while imaginative, are methodologically unsatisfactory.[12]

But to follow an earlier thought, suppose it were true that talk about having problems of which one is unaware is theoretical nonsense. (This conclusion would, of course, demand much more analysis than the cursory examination of common sense usage above.) Is it possible that one can be aware of certain problems yet not know what they are? An affirmative answer might seem paradoxical since the words 'aware' and 'know' are sometimes used synonymously; e.g., in the statements "I am aware that it is red" and "I know that it is red." Still, I think there is a kind of problem of which one might truthfully say: "I am aware of my problem, yet I don't know what it is because it can't be defined or put into words. I can only refer to it or point it out." Consider, first, the various sorts of problems which can be stated:

1. Should I take a pleasure trip or paint the house during my vacation?
2. A farmer gets 32 bushels of corn per acre from 45 acres. What is his crop worth at $1.40 a bushel?
3. How does one prove that there must be at least one less distributed term in the conclusion of a valid syllogism than in the two premises?
4. What are the respective degrees of learning resulting from "depth" and "breadth" methods of art instruction?

It should also be noted that solutions to these problems can be stated in language, or theoretical symbols, as well as can the logical or scientific procedures employed. These procedures range from an argument with the wife, simple arithmetic, or demonstra--tion by truth tables, to statistical analysis, respectively. When we know the answer to this kind of problem we sometimes can claim to have scientific knowledge.

Another apparently different kind of problem is involved in the following examples:

5. "There's my problem!" wails the housewife, gesturing toward the clashing colors of the drapes, walls, and sofa.
6. "Try this problem," says the child as he offer you his Chinese puzzle.
7. "Let me help you with this," says the husband as he helps his wife decorate for a party.
8. "Right here is my problem," exclaims the painter as he points to an unresolved section of his canvas.
9. "I think you can tackle the problem this way," says the director as he personally demonstrates a particular action on the stage to his lead actor.
10. "He just doesn't know how to act with children," comments the critic-teacher to the college supervisor of his student teacher.

In any of these situations, after a satisfactory solution has been achieved, we would not be surprised to hear the expression: "I know how to do it now." Even so, we would understand that 'know' is being used here in a different sense from the sense of 'know' in the first kind of problem solving.[13] For in the first kind, the solution has cognitive status--a fact, proposition, or demonstration in words or numbers; while in the second kind, the solution is non-cognitive--an object or performance essentially aesthetic or qualitative in character. True, we might overhear the problem-solver exclaim: "I've got it!," "That just about does it," or "You've hit it." More often than not, though, the "it" goes unnamed.

I believe the artistic process exemplifies this kind of problem-solving just as the scientific process exemplifies the first kind. To resolve an artistic problem is to achieve a sought quality, a desired aesthetic consequence of certain manipulations; to resolve a scientific problem is to achieve knowledge, an empirically certified generalization or law.

When artists do discuss the work at hand--when they engage in shop talk--their language tends to be highly referential. A major concern, especially so in recent times, is with the qualities of the material and what they are attempting to achieve with it in purely qualitative terms: the problems of relating lines, colors, textures, shapes, and so forth, to gain some qualitative end. Even in more general discussions, artists nowadays tend to focus attention on the qualities of their work. For example, in reply to Katharine Kuh, Hans Hoffmann said,

> What do I mean by "aesthetic?" I'll give you an example. Take a line. Now a line can have millions of variations--thin, thick, short, long, sinuous, staccato; but heretofore a line always represented something else. Today it is the line for itself, and that's what I mean by the aesthetic experience. The same is true of color--color as an expressive force in itself, as a language in itself. Both Kandinsky and Klee were among the first to realize this. In my work I have further tried to clarify the same idea. . . .[14]

And Picasso, Henry Moore, Matisse, and many other artists have, in recorded conversations, referred to their artistic methods and problems. To give only to examples, first a statement by Kuniyoshi:

> There are numerous problems that beset the artist in his work. Consciously or unconsciously each artist tries to solve them. Lately I have come to the stage where I actually take a problem and try to solve it. For instance I was interested in painting a dark object within the dark. In order to carry

> this out successfully it may take me several years. Once accomplished to my satisfaction, however, it becomes an integral part of me, enabling me to go on to another problem.[15]

And Josef Albers was quoted as saying about his work:

> I've always worked in periods during which I've concentrated on certain basic problems. To my surprise, these periods grow longer. The reason for this, I believe, is that in my experience any form demands multiple performance. I don't think we ever find _the_ solution for form-articulation. For me there is no end to this. For instance, I've worked for years on end with the series called Homage to the Square--and I'm still working on it as intently as ever.[16]

Some attention to the shoptalk of artists as well as to how they work indicates that the procedures of artists are not basically scientific or even linguistic but, rather, are qualitative; and their problems are not theoretical but qualitative in nature.

Elsewhere, I have attempted to describe these qualitative problems and the method of their solution in methodological terms. (This distinction between "method" and "methodology" is an important one and should not be slurred over. Justus Buchler says in his book, _The Concept of Method_, "in the broadest sense 'methodological' questions are those dealing with methods as their subject matter, questions pertaining to the origin, scope, nature, and relative value of methods."[17]) I shall mention here only three of the concepts. They are a presented relationship, pervasive quality or control, and, finally, total quality.[18] Roughly speaking, these concepts correspond to the beginning, middle, and end of art considered as a process.

Consider the artist's practice. He begins with a something--not a nothing. He begins with materials that permit him to generate a qualitative problem, not to be confused with a theoretical problem which is understood or mediated in theoretical symbols. The artist's materials are qualities such as those mentioned--color, line, texture, tone, shape.

Out of these component qualities there develop, hopefully, new structural qualitative relationships. Some are there already to be perceived, while others may only be imagined by relating a stroke as yet unmade to those the artist has already seen. His qualitative problem is to so manipulate presented qualitative relationships that further qualities are secured.

The results of this phase of painterly creation is to establish a new presentational context arising in the awareness of a new pervasive quality. Historically, such qualities have given a name to new styles or manners of painting, for example, the progression from impressionism, postimpressionism, cubism, and more recently, abstract expressionism and pop and op art.

Pervasive quality in its turn acts to prescribe further qualitative orderings without precluding experimental deviation which on occasion has led to dramatic changes in the predominant style of an epoch. Whether the artist experiments to change styles or merely makes more explicit the pervasive quality with which he is working, ultimately he aims at achieving a single cohesive quality, an aesthetic unity which I have called "total quality." First an end-in-view; finally a total quality as an end viewed. It is now there for all who can comprehend his ordering.[19]

Now the artist and the scientist have much in common. As Dewey has noted, they are both experimenters, exhibiting high orders of intelligence in their work. Yet my argument turns on the central fact that their materials, methods, problems, and solutions are strikingly different. It is true that art objects and processes can be used as data in support or denial of historical, anthropological, psychological or biological hypotheses, and legitimately so for the purposes of these sciences. But it should also be obvious that when art is viewed as scientific data or evidence, it is not being viewed as the qualitative process or object that concerns teachers of art. To put it in other words, art in the service of scientific inquiry is art considered not as a total quality but rather as either stimulus and response, as a status symbol, as an economic index, as an expression of repressed drives, as an historical document or in some other way employed to further the cognitive ends of a particular theoretical discipline.

One is prompted to ask at this point, what are the significant relationships, if any, between scientific or factual knowledge and the artistic method? One relationship is what may be called the technical one. It may be useful, for example, for a painter to test a certain new formula for a glaze he is using in his work; or a student may need to understand the chemical properties of acrylic paint in order to achieve certain special effects in his work. Overt reasoning about technical problems such as these might take the following form: "If this medium contains too much damar varnish, it might give a shiny surface to the canvas; I could add more turpentine to see what the effect would be. . ." or, "If you soak 2 and 1/2 ounces of rabbit-skin glue in 26 fluid ounces of water overnight; then heat until the glue is dissolved. . ." and so forth.

A second kind of relationship is more general. For example, the sculptor's knowledge of the New York art market, information as to who the judges will be for a big art show in which he plans to exhibit, the special requirement that his sculpture be weatherproof for outdoor installation, what his patron wants or what his instructor believes is good art--in short, what commercial, social, political, and economic factors he will consider--certainly may affect the selection of his sculptural problem and its solution. Yet knowledge of these assorted facts, values, contracts, rules, and formulas is adjunctive to the work at hand. And while technical information may act in an instrumental capacity in painting or sculpting, and may therefore be considered a phase of these qualitative processes, this information itself does not appear as a part of the process or of the solution.

III. Qualitative Problems of Artist and Teacher as a Distinctive Focus for Art Education Research

Now if the artistic process as methodologically conceived is essentially qualitative problem solving--the controlled procedure of instituting qualitative relationships as means to the achievement of a qualitative total or end--then what possible role can the researcher play to facilitate this process? That is to say, what role can he play apart from providing technical tips and marketing advice to the young art student (and impoverished art teacher), or apart from reducing art to, say, psychological or sociological knowledge.

The answer I should like to develop in the time remaining might well begin with the plea that art educators see their distinctive role in research both more narrowly and, in another sense, more broadly than heretofore. They should see their role more narrowly because research in art education has tended to dissipate its energy on a great variety of problems in piecemeal fashion with correspondingly weak results. Typically, variables thought to be somehow relevant to artistic production are selected from the literature of one or more of the social sciences or apparently on the dictates of common sense. Some currently popular variables are age, social class, room size, scores on standardized psychological tests, and scores assigned student art work by experts. Correlations are then run between two or more of these variables and the "art" variable as measured in existing or experimental situations. If high coefficients of correlation result, they are said to be significant, statistically speaking. Yet while these data are often of educational interest they are usually not theoretically significant. For even in the long run empirical inquiry not grounded in a theoretical framework is unlikely to make a significant contribution to the psychology or sociology of art. Even when current modes of inquiry in art education become theoretically significant and educationally useful, they will at best indicate the necessary conditions for art learning.[20] What would remain neglected, I believe, is precisely what would provide the focus of research in our field, not its quantitative but its qualitative dimension. By this I mean the description and prescription of qualitative means and qualitative ends: in short, the methodology of art education paper.

In another sense, however, it is possible for art educators to see this research role more broadly, since qualitative problems are not limited to the studio or to the art room of the public school. While the so-called fine arts do provide us with some of the finest examples of qualitative ordering and achievement, qualitative problems may also be found and chosen in interpersonal relations and in the larger social units of the family and community, as well as in all teaching-learning situations in and out of school.

This broader conception of what qualitative matters are appropriate for art education research thus reveals a new role for those arts involving humans as component qualities--not of paintings or sculpture but of situations. I am referring to public speaking, the dance, and especially drama: arts which depend upon the qualitative relationships a performer is able to establish with other performers and, of course, with an audience. If the plastic arts offer paradigms to the student of art, the dramatic arts may well offer paradigms of performance to the teacher of art, and indeed all teachers.

I believe the qualitative problems, methods, and solutions of the professional actor, for instance, would, if systematically studied by art educators, expand the present conception of teaching and of teacher training to include some of the very same qualitative aspects that are to be found in drama. The qualitative dimension of good teaching may indeed by characterized as a series of events or situations created by the teacher and students, which have dramatic unity and interest for teacher and students. Some teaching problems are undoubtedly problems of control, choice, and sequence of situations, while all teaching problems are located in some particular situations or other at any given moment; that is, in a qualitatively unique situation. And successful teaching depends, at least in part, on varying degrees of control in that situation.

Hence, the classroom considered as theater would prompt the researcher to focus his attention on the pervasive quality of teaching-learning situations in the classroom as well as on the qualitative elements of voice, gesture, action of the participants as dramatic personae. The pervasive qualities of attentiveness, unrest, permissiveness, authoritarianism, enthusiasm, spontaneity, boisterousness, boredom--even love, anger and hate--may be seen to characterize some classroom situations, even by a glance through the door. And as supervisors and principals know only too well, the lead actor establishing the pervasive quality in an unfolding classroom drama is not always the teacher. But then, should he always be?

This question and many more arose when I first suggested the analogy between their acting and teaching to the group of student-teachers under my supervision this past year. Should their students always be the audience during a presentation? Could not the students be actors as well? And who writes the script for classroom performances? In what ways are the purposes of acting and teaching similar? In what ways are they different? What started out as a casual discussion in our seminar on campus soon led us into a full-scale inquiry. The principles of rhetoric, various theories of drama, and criteria for evaluating public speaking and the performing arts were sought out.

Consider this remarkably apt passage from The Art of Acting,[21] by John Dolman, Jr.:

> If the young actor does not have a naturally accurate sense of timing--as most do not--there is only one thing for him to do. That is to train it by experiment. Taking each comedy line or situation as a special study, he must try it out with every conceivable variation of tempo. He must try it fast, and try it slow; try it with slow start and rapid finish, and with the reverse; try it without pauses, and with; try pausing just before the main point, and just after it. If he can arrange to record his experiments and play them back for study, so much the better; but he must not be trapped into the common error of listening only to his own words and inflections, and not to his meanings. In other words, he must not get so interested in the mechanics of expression as to forget that they are only the means, not the beginning and not the end. Important as timing is, he must realize

> that it cannot be completely isolated, even for study, but must be considered in its relation to all other elements of expression--pitch, force, timbre, and so on. And he must understand that the problem of timing is a problem in the coordination of voice, gesture, facial expression, pantomimic action, movement, and every other conceivable element of expression; it is not a problem in vocal expression alone.

Following up this advice and ideas from other sources, my students began to record on tape the lessons they taught in order to study the playback. Invariably, their reaction to the first playback was one of shock: initially over the uncertain quality of their teaching voice now revealed to them for the first time, but gradually a more profound shock over their inattentiveness to the moods expressed in the student's voice as well as to the emotive import of student discussions. Questions were "mis-read" and the answers given were incorrect or inappropriate to the situation.

On the basis of these reflections and my observations of their teaching, we began to revise our notions of what lesson plans might include and more basically what should be planned and what should emerge in the situation. We also compared tapes and my notes made at intervals of time in order to check on specific improvement in qualitative control. We attempted to exploit the basic analogy between teaching and acting so as to discover other ways of freshly viewing the act of teaching, to break down stereotyped notions of what teaching is. We tried to imagine what classroom situations and elements were analogous to the following: theatre-in-the-round, the living premise, voice projection, cues, denouement, empathy, catharsis, dialogue, stage lighting and sets, theatre of the absurd, tragedy, happenings.

It should be mentioned that initially all of us assumed there would be a great number of differences between acting and teaching as well as similarities. By the end of the quarter, however, some of us began to suspect that there might not be any significant differences. However, the strongest argument against the analogy was presented by one of my students. She reasoned that teachers who considered themselves actors were not being sincere, that to play a role with students was dishonest. To be oneself was the only way of being an effective teacher. Others argued that "being themselves" in their first attempts at teaching was certainly not as effective with students as in later attempts, after they had developed some acting skills and understanding of their roles as teachers. This particular discussion led us to consider such anthropological and philosophic questions as whether man has an essential nature or whether, to the contrary, different men in fact learn to play different kinds of roles in their respective societies, one of which might be the role of an effective public school art teacher in a democracy. On this latter view, the notion of personal integrity might be seen to refer in part to a consistent or pervasive quality an individual is able to maintain in his various social roles. In any event, we all agreed that comparisons between televised or filmed recordings of their teaching and recordings of model performances by master teachers and actors would have been useful. And we would readily imagine the value of a full-blown teacher-training program which included the theory and practice of teaching as qualitative problem solving.

By referring to the inquiries of these student-teachers into their own practices I have tried to suggest what methodological research might concern itself with in art education. In light of their inquiries, let me now expand my initial account of the artistic process so as to include teaching and the dramatic arts as well as the plastic arts in its purview. A qualitative problem is achieved when present and possible qualitative relationships are taken as means, or ways of proceeding, toward an end-in-view, a total quality. The total quality sought may be: (1) an object such as a painting or piece of sculpture, where the component qualities are colors, textures, planes or shapes; or (2) a situation or sequence of situations such as found in the classroom or theater, where the qualities of the human voice, gesture and movement are added to the qualities of objects.

Left undeveloped yet implicit in the foregoing analysis of teaching as qualitative problem solving is a conception of those problems capable of being dealt with in language. These I have called linguistic or theoretical problems, modeled somewhat on Dewey's conception of problem solving as scientific inquiry.[22] The two kinds of problems are logically distinct, as we have seen. But I would like now to suggest how theoretical problems for educational research may arise out of or be grounded in the teaching-learning process.

A major qualitative problem of an art teacher is that of determining the desired pervasive quality in his classroom situation in order to reconstruct the present one. His personal appearance, poise and gestures and those of his students are relevant here. For as he sees or intends himself and his students as components, he begins to forge a pedagogical situation. This situation is distinctive to art teaching when the pervasive quality is selected in support and as a means of facilitating student learning in art: learning to paint, draw, and sculpt as well as learning to understand and appreciate his own art-work, the work of contemporary artists, or the art of the Western World.

Within this situation the teacher provides students with a sequence of theoretical and qualitative problems. Theoretical problems are presented in the form of such questions as "What makes a painting good?" "Why is one piece of sculpture considered by critics to be better than another?" "Can anyone learn to be an artist?" and "Why is Cezanne called the father of modern art?" To repeat: the chief feature of these problems is that they are stated in words, whether in an ambiguous or precise manner, and an answer is expected in words. The other kind of problem, as we have noted, is not to be found in words, although qualitative problems are referred to in the shoptalk of the art student as he strives to achieve, say, an expressionist or hard-edge style of painting. His work--his canvas--exhibits his problem. Talk may be about "lack of perspective," "receding and advancing colors," "intersecting shapes," and so on; but the problems are essentially non-linguistic. An essential part of the teacher's job, then, is to select, encourage, re-direct, or suppress from among a variety of possible problems before the student. This characteristic feature distinguishes teaching as a normative affair, both with respect to the kinds of problems and their specificity. It is interesting to note that even if the teacher chose not to give the students his problems, it would remain an ethical choice among alternatives. More generally we might say that to provide others with qualitative problems is (1) to present, locate, or select qualities, and (2) to institute choice, whether for art students or art student-teachers.

Now we come to the question as to who is competent to decide what problems the students are to have. Apparently, we have assumed in this country that the question of sorting out problems is--or ought to be--within the art teacher's professional competence to decide. What defines competence? I think a plausible answer is: a personal history of working successfully on the theoretical and qualitative problems under consideration, a professional who has undergone the confronting, noting, pointing out to others qualitative relationships and controls. In the case of the problems of the art student it is the art critic, historian, painter, sculptor, architect and others while in the case of the problems of teaching it is seasonal art teachers, art supervisors and also professional actors, directors and playwrights. (Here is precisely the advantage I see in holding this conference: to draw upon the specific competencies of these specialists in order to help art educators see their respective problems more clearly.)

Their respective roles are distinct, however. The mark of a professional artist is his deliberate and sustained preoccupation with qualitative problems. The historian and critic have their own theoretical and critical problems with those total and sometimes new pervasive qualities the artist manages to create. The art educator is distinguished from the artist, historian and critic primarily in that his objective is to develop in others the ability to initiate qualitative controls, alternative procedural skills, and to equip them with ranges of understandings permitting critical evaluation and choice. Those research problems he undertakes are significant or insignificant in relation to this objective.

In summary, the art educator has both theoretical and qualitative problems; and as researcher he has as at least one of his central tasks that of helping art teachers to clarify their professional problems and to structure and justify their art curriculum. Philosophical, psychological, and sociological considerations enter in here as well; and it is to scholars and researchers in these areas that the art educator should turn. Thus, some problems of art education, as methodologically viewed, are at once unique to the field and in need of assistance from related fields. The extent to which these problems are successfully researched will be the extent to which the aesthetic foundations of education are established as well as a common core built for the field of art education.

List of References

1. See, for example, Bernard Berelson and Gary A. Steiner, Human Behavior: An Inventory of Scientific Findings. New York: Harcourt, Brace and World, Inc., 1964.

2. An excellent argument against the idea that art education can be a discipline may be found in Elliot Eisner's "Editorial: On the Impossibility of Theory in Art Education," in the Fall 1963 issue of Studies in Art Education. A rejoiner may be found in my "Editorial: On the Possibility of Theory in Art Education" in the Spring 1965 issue.

3. Everett J. Nelson, "The Category of Substance," in Philosophy for the Future, edited by Roy Wood Sellars, V. J. McGill and Marvin Farber. New York: Macmillan Co., 1949, p. 106.

4. See Henry E. Kyburg, "Recent Work on Induction: 1945-1960," American Philosophical Quarterly, Vol. II (1965).

5. Arthur Pap asks "Does science have metaphysical presuppositions?" in his article by the same name and argues in effect, No, in Readings in the Philosophy of Science, edited by Herbert Feigl and May Brodbeck. New York: Appleton-Century-Crofts, Inc., 1953.

6. The Collected Papers of Charles Sanders Peirce, edited by C. Hartshorne. Cambridge: Harvard University Press, 1931-58, Vol. V, paragraph 9.

7. Desmond Morris, The Biology of Art. London: Methuen and Co., Ltd., 1962.

8. H. W. Janson, "After Betsy, What?" Bulletin of the Atomic Scientists, XV, 2(February 1959), pp. 68-71, 93.

9. Morris quite rightly argues that some of the obvious differences are not aesthetic differences; e.g., the religious, political, social or representational character of some human art.

10. Dale B. Harris. Children's Drawings as Measures of Intellectual Maturity. New York: Harcourt, Brace and World, Inc., 1963.

11. Webster's Collegiate Dictionary, 5th edition.

12. See Psychoanalysis, Scientific Method and Philosophy, a symposium edited by Sidney Hook. New York: New York University Press, 1959.

13. Gilbert Ryle has pointed out that in ordinary language we distinguish between "knowing how" and "knowing that": the former refers to the ability to do certain sorts of things, while the latter refers to a person having knowledge of this or that truth. Cf. The Concept of Mind. New York: Barnes and Noble, 1949, pp. 27-32.

14. Katharine Kuh. *The Artist's Voice: Talks With Seventeen Artists*. New York and Evanston: Harper and Row, 1960, p. 122.

15. *The Creative Process*, edited by Brewster Chiselin. New York: The New American Library, 1955, p. 62.

16. *The Artist's Voice*, p. 21.

17. Justus Buchler. *The Concept of Method*. New York: Columbia University Press, 1961, p. 125.

18. The stages of qualitative thought exhibited in the artistic process are: (1) a presented relationship, (2) substantive mediation, (3) determination of pervasive control, (4) qualitative prescription, (5) experimental exploration, (6) conclusion: the total quality. See "The Artistic Process as Qualitative Problem Solving," *The Journal of Aesthetics and Art Criticism*, XXI, Spring 1963, pp. 283-90.

19. Monroe C. Beardsley, among others, has challenged my account of the artistic process. He labels it a "Finalistic Theory" because he thinks that in my account "The controlling agent is the *final goal* toward which the process aims." But I plainly state in my original article that "given a *pervasive quality*, whether *arriving early or late* in the artistic production, future mediations follow according to patterns of qualitative relatedness." (my italics) I also make clear that both the pervasive quality and total quality (or "goal") may be changed at any moment. See Monroe C. Beardsley, "On the Creation of Art," *The Journal of Aesthetics and Art Criticism*, XXIII, 3(Spring 1965), pp. 291-304.

20. Some inquiry in art education is, of course, attending to the qualitative dimension, and is therefore useful to the art teacher. See Kenneth R. Beittel and Robert C. Burkhart, "Strategies of Spontaneous, Divergent, and Academic Students," *Studies in Art Education*, Vol. 5, No. 1 (Fall, 1963), pp. 20-29; Robert C. Burkhart, "Conditions Increasing Self-Reflective Learning in Art," *School Arts*, (October 1964), pp. 23-30; Elliot Eisner, "A Paradigm for Teaching the Visual Arts," *School Arts*, (May 1964), pp. 29-31.

21. John Dolman, Jr., *The Art of Acting*. New York: Harper and Brothers, Publishers, 1949, p. 127.

22. Since Dewey wrote *How We Think* (1910) and *Logic: The Theory of Inquiry* (1938), outstanding works on problem solving have been Max Wertheimer's *Productive Thinking* (1945) and Karl Duncker's On Problem Solving (1945). There are many recent studies, but to name just two: Norman H. Mackworth, "Originality," in *American Psychologist*, Vol. 20, No. 1, January 1965; and Jacob Getzels, "Creative Thinking, Problem-Solving, and Instruction," *Theories of Instruction and Learning*, National Society for the Study of Education, 63rd Yearbook, Part I, Chicago, University of Chicago Press, 1964.

    For some of the main underlying themes of the present paper, I am, of course, indebted to Dewey, especially for his essay "Qualitative Thought." Nathaniel C. Champlin and Francis T. Villemain have provided me with specific criticism and general inspiration for the ideas presented here. See "John Dewey Centennial: A Special Section," *Saturday Review* (November 21, 1959), pp. 16-26, which they co-edited.

EXCERPTS FROM THE DISCUSSION WITH MR. ECKER:

Audience: Referring to some statements in your paper, I hope that you don't mean to suggest that teaching art can take place without consideration of such variables as socio-economic class, and so forth -- that it happens as it were in a vacuum.

Mr. Ecker: Well, teachers never heard of variables. Researchers talk about variables, but it seems to me teachers by and large are singularly uninformed about the results of research in these disciplines; and it is obvious that they are able to teach. So, it is not a necessary condition for teaching that they read or understand research. But it is obviously a necessary condition for teaching that the teacher be breathing, for example. The proof is: stop breathing and you can't teach. Of course, you could say that the existence of the planetary system is a necessary condition for human survival, which is necessary to breathe, which is necessary to teach. On the other hand, I think that the social sciences *can* indicate some less obvious but equally significant conditions which are necessary for successful teaching. So, in that sense you are right to insist upon the value of research for teachers. The best of this research is conducted within a theoretical framework which has the virtue of yielding scientific knowledge about, say, how learning is related to social class. Within such a theoretical framework findings can be interpreted precisely. Outside such a framework findings are either common-sensical or nonsensical. In my paper I was *not* trying to reduce research in art education to methodological research. I was arguing that we shouldn't overlook the qualitative dimension or reduce it to a quantitative dimension and thereby overlook the possibility of an aesthetic foundation for education.

Audience: In other words, you are not making it an either/or situation.

Mr. Ecker: No, I am not. I conclude my paper by saying that these problems I have named are, on the one hand, unique to art education, and that is what I meant by the "broad sense". We have to broaden our conception of our subject matter to include all pedagogical situations where qualitative ordering is going on. On the other hand, I spoke of a narrower sense of our subject matter in terms of a more unified discipline of inquiry. Some of our research seems to be spread over such a wide range of disciplines that the field has a hard time integrating such diverse findings -- especially the art teacher. Because of this diversity of material, I think art teachers pay little or no attention to research in art education. Now, of course, this is not all our fault. Art teachers should read such journals as *Studies in Art Education*. However, the fact remains that unless we pay attention to some of the qualitative problems I have identified -- and I am not saying this is the only way to describe them -- then to that extent we have missed the unique focus we could gain through methodological research.

Audience: In what ways would you see, in your terms, a qualitative research report to teachers differing from those we have now, and in what ways would you see in research reports of qualitative method to research people differing from research reports we have now?

Mr. Ecker: Well, Hugh Stumbo and I have argued these questions at length between ourselves and with the students, both graduate and undergraduate. So I am not going to take credit for all these ideas. But I did report some of them in my paper. We asked ourselves what we could say or do that would make a difference to student-teachers who are out teaching in a public school part of the day. We found, for instance, that the students were helped by a study of tape recordings and transcripts of their actual teaching in relation to their lesson plans. But let me speculate a bit, here. I can't think of anything that makes more *sense* -- and here I am taking the word in its most literal meaning -- than to have future teachers look at, say, five master teachers teaching art in quite different teaching strategies under different conditions. This observation would be over closed-circuit television, or by means of film strips, or videotape. I can imagine such observations in an introductory course in art education as being far more effective than an instructor haranguing them with theories of learning, and so on. Students and young teachers could be provided with a qualitative display of different teaching styles and the controls necessary for success in each style. They could compare performances and be asked such questions as: Are you more like this teacher or that one? Of course, the qualitative controls various teachers exhibit in the films could be identified as "personality traits" and a result of "basic social patterns". Distinctions such as authoritarian versus permissive types, open versus closed minds, divergent-convergent could be applied. But to talk exclusively in these technical terms to art teachers just doesn't make sense in my experience. That's not to say, that there is no sense to be made out of these terms, but that it takes a trained researcher to make sense out of them. You also raised a question about reports to researchers. Here we want the most critical writing, the most precise language possible, statistical or otherwise. But this creates a dilemma: the more precision and technical our writing becomes the less relevant it seems to the artist, for instance, and the art teacher -- those who are working primarily in a predominantly qualitative situation, and in the case of the artist, with a qualitative object.

Audience: Would you elaborate more on your opinion of the role of critics and artists in art education?

Mr. Ecker: I ended up by referring to the art critic as precisely one of the professionals in art who has a competence which qualifies him as a model for the art student. For anyone else to do this job is either to do it in a -- well, he is incompetent to do it, typically; and I find art teachers for instance who have had no experience in art criticism, are just not prepared to talk intelligently about the art object. Typically in our field, as we all know, we have been so -- how shall I put it, politely? -- "non-intellectual" about the states of affairs we are interested in that we have tended to ignore the role of the art critic, which I think is a vital one, and I think one that has been neglected. I have defined competence as the preoccupation or the professional concern with either qualitative or theoretical problems in depth; and to get this competence takes more than reading books. It is to do art criticism over a long period of time. Of course, that in itself doesn't guarantee that it is good criticism. I imagine there are some other requirements because there happen to be, in my estimation, very few outstanding art critics in the country. We are fortunate to have one here.

Audience: How can we spread them around since there are so few?

Mr. Ecker: One way is by reading The Tradition of the New. I also would like to see more of what Charlotte Johnson has done in her short, all too short, critiques of contemporary art which appear in School Arts. At least we have that. It seems to me that far more could be done in this area to write, not down to the junior high student, but directly to him in his own terms on such topics as what makes a painting good, what is pop art, what is pop art all about, what is a "happening". They ask us these questions. They see reproductions in Life Magazine, Time, and they are very much aware that someone has painted a copy of a Brillo box and they want to know about it. Typically, I find the art teacher is just not equipped to answer these kinds of questions in an intelligent manner.

Audience: I ask you to comment on the levels of abstractions appropriate to qualitative phenomena. It seems to me in one way while I salute the term "qualitative" it seems to be resisting conceptualization. What I am asking, in part, is how does this differ, for example, from the problem that scientists themselves must deal with when they treat physiognomical data, or let's say general systems theory, or let's say "quality".

Mr. Ecker: Of course, I have tried to make my distinctions as sharp as possible in the context of my paper. But, for better or for worse, all of us live in a qualitative world, including the scientists; and however much the ordinary man may feel that the scientists have left us, still the definition of scientific knowledge is that it accounts for and is accountable to phenomena. Now you ask about the level of abstraction. That is a very good question. I think for instance that even in the introductory course I was trying to describe, the discussion can be quite abstract even about very specific qualities displayed in films, or in an art object. The word qualitative of course is a very abstract word. It can refer not only to line and color or a facial expression; but also to hardness, softness. And, as a matter of fact, you could even take it to be a metaphysical concept. I think there are some aspects of Dewey's writings that surely can be taken metaphysically. I mean by metaphysics the most general description of what is real. So I think while we do tend to -- in fact in my answer to Bob I suppose I have done it -- that is, oppose abstraction with concreteness, as a matter of fact we are all living in concrete situations. Yet the focus of our attention is not on qualities here, but rather I hope it is on the structure of our argument or our discussion or our illustrations. Now, in naming specific methodologies, surely there are several disciplined ways of looking at phenoma, and one of them is what's called the phenomenological method, founded by Edmund Husserl. The attempt there is to reduce the complexity of thought, action, memory, and so on, to phenomenological descriptions. Dr. Villemain has described another philosophical method -- methodology, if you will -- toward the end of his statement this morning. His concept of qualitative intelligence is another approach, possibly, to the problem of relating human thought to human behavior or human thought to the context in which humans have problems. I am not saying that scientists do the abstract thinking and the rest of us pay attention to ordinary matters; but I do think the focus is different. Where in the first case the scientist is nothing if he doesn't produce scientific knowledge. That is his business. Now we teachers may draw upon scientific knowledge, or it is useful educationally if it points out to us necessary conditions for, say, learning in art, but the crucial thing is that they are not sufficient conditions. What are sufficient conditions? A sufficient condition for learning would be the pointing out, the discriminating, the selecting and rejecting of qualities in the classroom. By sufficient, I mean if that occurs nothing else need occur. It is, in fact, sufficient. But that's not so surprising because *a* is *a*, you know, *selecting* is *selecting*. If you have people select then you have them selecting which is, perhaps, a goal of art appreciation, or art education; so you needn't know what the necessary conditions are that allow this to happen. You need not know about what the encephalogram must indicate for you to be a rational person, although that is very interesting. You might begin to sort out some teachers on that basis very usefully.

Audience: I strongly support you in your efforts at pointing up the qualitative dimension that has been so neglected. It seems to me we could almost reduce this to the old dichotomy between knowing about your subject and knowing how to teach. But not quite. It seems to me you very gracefully related the third dimension, the aesthetic situations that people live in, to the art of teaching. But I would like to argue, on an equal basis, for the foundational understanding of society and individual differences with which a teacher identifies what will be a meaningful choice that people can make. I will disagree with you when you say that when successful teaching takes place this other kind of foundational knowing is not a part of it. So you have almost posited a three-dimensional basis for thinking of art education.

Mr. Ecker: Let us think, for a moment, in the terms of the sociology of art education. A middle-class teacher sometimes is just not equipped to recognize some pervasive qualities displayed by lower-class children. In this sense I am saying that anybody doing inquiry has to pay attention to relevant qualities. So we can't escape it. In fact, I am beginning to see some relationships between the euphemism, culturally deprived "student group -- why not just say here are the poor kids --here is how they act, talk, and behave; and those are the qualities that a teacher ought to be able to recognize and make some crucial decisions about them in terms of what kinds of situations he should strive to establish, which is not just to unthinkingly try to establish middle-class qualities and dress, polite speech, and nice manners.

Audience: I don't want to put words in your mouth, but I want to go back to your view of the qualities to which an artist attends as he seeks to achieve pervasive quality in his work. Similarly, in a teaching situation, it would seem to me that qualities in the situation such as cultural conditions would have their effect on the pervasive quality in the teaching and the learning situation.

Mr. Ecker: That is precisely why I have turned to the dramatic arts for clues. It is to draw the analogy that you have just drawn between the two kinds of materials. You don't try to make a steel sculpture look like plastic for instance. Or better yet, to follow an earlier answer we don't try to impose one conception of what good teaching in the arts is. Now even to go beyond that I think we have tried to impose the model of the artist on art teachers. Whereas it seems to me that other models would be the art critic or the art historian as the art teacher. As a matter of fact I myself tend to equate art education with art criticism. Now this will run into some problems in the elementary school because a very good argument is that the art teacher is really a psychologist trying to help children unfold; and at a higher level that the art teacher is sympathetic to the needs of adolescents; and I am not about to deny that these are valid ways of conceiving art teaching. What I am impatient about is our exclusive attention to the image of the art teacher as artist. There are other equally valid conceptions of what it is to be an art teacher; the art historian certainly is an art teacher; the art critic certainly is an art teacher. I am interested in making tapes now for a series to be called *Master Teachers of Art*. Incidentally, these people are certified master teachers by OSU. They won a prize for being the outstanding teacher of the year, and there we have people such as Morris Weitz who would teach art differently, being a philosopher and aesthetician, than Professor Hoyt Sherman who is a painter. So, what I would hope to do with the young art student who aspires to teach is to not impose upon him necessarily a studio orientation but to show him this one among others. Other than the studio orientation would be the role of the art critic, historian, etc., as I find them on my campus and on others. So, here I think, that the analogy between honesty to material in art and honesty to, not something innate in people, but certainly something learned at a very young age, namely, personality and basic behavior. I don't think you can do too much with these. Even if you are an actor. I think that not everyone can play Hamlet and not everyone can be a comedian, but it is in a sense being honest to the materials in the dramatic arts; that is, to allow the future art teacher to see not just one model but several excellent models -- or you might call them, paradigms, ways of imagining what it would be like to be an art teacher.

THE HISTORY OF ART IN EDUCATION

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One of the greatest difficulties in discussing programs in art is posed by the way we habitually use the word art itself. I have no intention of launching into another tiresome discussion about the word's definition; I am only referring to the extraordinary range of educational activities that crowd under the heading of this long abused and troublesome word.

While at an earlier moment in history the word encompassed a range of activity as great as it does today (although not necessarily the same activities), its definition began to change at the time the artist assumed the position of genius. From about the middle of the sixteenth century to early in the nineteenth century it was applied to an ever more restricted area. From the period that history has designated the Renaissance, art became gradually a very special thing, separated by aesthetic quality and social prestige from the crafts and other structural activities. It became the province of special schools and especially refined sensibilities. Our present generosity in granting the word dominion over so vast a program doubtless came as a reaction to the exclusive and convention-bound notion of art which dominated academic theories in the nineteenth century, terminating this long tradition. It was in the middle of the last century that the concept of art as a delicate and forced cultural flower became suspect, and there were those who insisted in opposition that an honest design for calico was worth more than a skillful but meretricious painting for the salon. By the end of the past century it was granted by imaginative theorists generally that a chair, a vase or wallpaper design might all be accepted as embodying sufficient evidence of creative expression to be included as works of art equal in quality, and in some instances in kind, to painting and sculpture. From this acceptance to our present point of view was only a step. The activities worthy of inclusion expanded tremendously until now if one speaks of an interest in art he may be referring to weekend recreation or the methodical collection of objects prized in terms of a speculative market.

While the debasement, if one may call it that, of a too exclusive notion about the nature of art was certainly necessary to restore purpose and seriousness to art, the process has been carried to a dangerous extreme. We have reached a point at which clarity of thought and nicety of judgment have no place with respect to art in the mind of the public. Art has been defined throughout our educational program as a kind of activity we dub "creative," and there is little suggestion that one could or should distinguish between one person's creative effort and that of another. The recognition of value in art has become a cloudy issue at best. In fact, to speak of a painting as being to a degree more intellectually charged than a ceramic vase is still countered almost as of it were a slur, a philistine re-assertion of outmoded values. And yet only the most hardened practitioner can deny that his reaction to a serious painting is different from his reaction to a well formed pot. It is time, if not past the time, to reassess the situation, to salvage from the notion that art is an endless and mindless sea in which one can splash without care or thought, those qualities most meaningful to human understanding. It is time to separate the revitalizing stimulous of the artistic experience from the recreational virtues of maverick behavior. The part that a study of the history understanding. It is time to separate the revitalizing stimulous of the artistic experience from the recreational virtues of maverick behavior. The part that a study of the history of art might play in this process is the subject of this paper.

I.

One of the possibilities that became evident in the mid-nineteenth century through the rethinking of art in terms of a creative activity rather than in terms of perfect objects was a new insight afforded the historian in viewing the past. Conrad Fiedler suggested that since the work of art came into being as the result of a willful, meaningful process, it should be looked at in terms of that process and not in terms of some previously established external scheme. The work should be judged in accordance with the creative will evident in it. The history of art, then, as Riegl insisted in his restudying of works from a despised period of early art, was not to trace the rising and falling currents of artistic quality, but to understand the peculiarities of form in any period on the basis of the artistic volition expressed: it must be assumed that the competent artist of the past accomplished his goal and was not attempting something beyond that which he achieved.

The effect on the historian of this doctrine, basic to modern studies of art, was of two kinds. First of all it freed him from an organizational system that excluded much of past art from serious consideration (the process had begun early in the century when the "in between" art of the "Middle" Ages became for some a consummate achievement from which the art of the High Renaissance was a decline) and forced him to try to formulate history in terms other than those of his own aesthetic preferences. A vast new range of material was presented for his serious study, and he begun to look upon it in much the way a naturalist might regard the whole complexity of nature. In the disinterested character of this regard lay the second effect. Impressed by the growth of systematic method in the sciences, the historian began to imagine himself an exact scientist, analyzing, classifying and grouping works of art with complete objectivity. The way for the connoisseur, the expert in attribution had been pointed out by such pioneers as Rumohr, Crowe and Cavalcaselle, and the meticulous Morelli. It must be remembered that artistic volition marks the handwriting of the artist as well as the content of his work, and it was the artist's handwriting that became the substance of a new history of art.

Ironically, while the historians were tending towards a greater belief in their objectivity, the artists, also conscious of art as creative activity, were becoming more concerned with inner processes, qualities which were called evocative, expressive or suggestive. They emphasized the intuitive apprehension of meaning in sensuous form, which stood against the historian's derivation of meaning from the comparison of objects in a chronological context. There were many warnings along the road about the abyss that was developing between the way the historian was looking at art and the way the artist was creating it. Croce insisted that the historian could not ignore the artistic content which spoke through the intuition, that the historian, whether he liked it or not, was involved in a critical, not simply an analytical process, just as the critic, dealing primarily with an examination of the artistic experience, could not close his eyes to history. And Bernard Berenson in his extraordinary little books on Italian painting published at the turn of the century shamelessly enjoyed the works with infectious enthusiasm while he assembled them into schools, a habit often considered a weakness or fault in his method.

But the analytical method won out. Wolfflin was eventually able to construct a history based wholly on the interplay of catalogued formal characteristics, in which artistic volition was generalized to fit epochs, not artists, and a historical form became the ultimate work of art in which the individual products of artists were only the structural elements.

Given this background, it is not surprising that well before the first world war the artist had begun to see past art and those concerned with it as antagonistic to his own activity and meaningless to artist and public alike. While many laughed at Marinetti's assertion in 1909 that museums were "graveyards of vain efforts ... Mount Calveries of crucified dreams," artists no longer looked to the collections of old masters as training grounds for their artistic sensibilities. The paintings were no longer theirs; they belonged to the historians.

It is natural that those interested in art, whether layman or scholar, should tend to identify themselves with either one side of the other. The schools, as usual, grossly exaggerated the issue and cut off all fruitful communication between the two extremes. In educational programs the theories of John Dewey were bizarrely distorted to support the idea that art could be studied only through the act of production. "Creativity" became the virtuous catch-word, and it was largely restricted to the activity of the hands. Something known as "creative art" was the goal, leaving one to speculate on the nature of an art that was not creative. Although Dewey was concerned with an intellectual process (not necessarily a rational one) the whole direction of education in art was anti-intellectual. It encouraged simple, sensuous preoccupations which found their culmination in decorative values, as if following Roger Fry with half a mind. Characteristically, a belief in the intuition produced in the pedagogic mind the desire to school the intuition, and a rigid system determining what was and was not "creative" form was produced. Such terms as "free form" and "modern" became academic cliches, as wooden as the categories of the historian, although their supporters were theoretically opposed to the methods of history. The much vaunted "creativity" became in fact only improvisation, divorced from the serious judgments of the mind; creativity came to mean a frivolous release from thought and the more revelatory reaches of the imagination.

Contemporary with the process I have sketched, through a period beginning early in the century and not yet entirely closed, there developed a compromising effort which tried to soothe the conscience of those who believed in the new ideas of art as creativity, yet did not want to relinquish a study of past art. In school curricula this effort was called "art appreciation." It was despised by historians as simply a shoddy escape from disciplined study, and by artists as a misconstruction and belittling of their activity. The courses took many forms ranging from the anecdotal histories of artists' lives to rigid, non-commital formal analyses such as those of Albert Barnes. While there was a body of doctrine for the history of art and another for its production, there was little comparable available for its "appreciation." Art, thus considered, was any man's game, and any man was likely to teach it.

Most puzzling in this well-meaning effort to fill an ill defined but seriously felt deficiency is the term "art appreciation." Why was it necessary? What was it trying to say? We have never emphasized courses in "literature appreciation." We have usually taken for granted that to study literature is to concern ourselves with the intellectual and emotional satisfaction of prose and verse. To be sure, there are courses dealing wholly with grammar and composition, but no one has been simple enough to suppose that this study of itself would produce understanding and satisfaction in the study of literature: they are simply courses in the language. The composition of a school boy sonnet has never been considered seriously an adequate substitute for the reading of Shakespeare, Eliot or Pound. Nor is the history of literature condoned as a study exclusive of the careful analysis and understanding of individual texts.

That literature was to be understood, art appreciated, was a euphemistic way of saying that the one was a concern of the mind, the other not - a tribute to the mystique of the creative. Yet the term "art appreciation" showed a desperate urge to indicate that there was a meaning to be derived from a work of art that was concerned neither with material production nor chronological system. The desperation was caused in part by the collapse of an institution indispensible to artistic culture the critic, the guardian and spur to the critical faculty. Embarrassed by the error and ineptness of much criticism from the recent past and intimidated by the authoritative voice from one side or the other, either historian or artist's the critics, with few notable exceptions, took shelter either with the historians or affected the disguise of the artist. In many instances the artist was expected, and still is, to explain in words what he has done in paint, to serve as his own critic. Even if he could say accurately what he has done, it would not substitute for lay criticism unless he were himself able to see his work as if it were done by someone else. Looking at and creating paintings are very different processes, and one is not simply the lesser form of the other; to pretend to be the artist in looking at a painting is only to pretend to understand.

Criticism is concerned with apprehension, with knowing in its most personal context. Without it as a third force between the creative impulse of the artist and the external context of the historian, knowledge in art remains merely a knowing about rather than knowing. It is quite possible that in some branches of study there is no difference. In humanistic study there is. To know about something serves to make the thing usable, capable of being manipulated; to know is to make the thing a part of yourself, to be internally changed by it. It is this second kind of knowing that should concern the critic and, by extension, those of us who look at rather than make works of art.

II.

History, not criticism, has for some time been considered by academics the only other way to study art, that is, other than to learn to paint. Most books on art now published for the general market purport to be histories: at least, that is how they justify their existence. As such they are filled often with irrelevant anecdote or they authoritatively spell out doubtful causal relationships between artists, art and politics, abstract movements, etc. In general, they follow one of two patterns in one the artist's personal life is substituted for his work; in the other a consciousness of time or place in some external ordering of things stands in lieu of a concern for the particular works' content.

These two tendencies that often masquerade as history go much more deeply into our thinking than to effect the sale of popular books on art. The biographical approach or the "where am I in history" has begun to dominate once more the production and sale of works of art. In this we have returned to a curious nineteenth century tendency which in our thinking moments we decry. In this case, however, it seems to have grown out of the kind of education in art I have discussed. Through the last third of the nineteenth century in particular, the artist himself became a self-conscious public figure. The roots of his self-consciousness reach far back, but it was a century ago that the public recognized and savored the peculiarities of his circumstances. Fashionable artists built elaborate studios filled with antiquities and exotica from far places and ostentatiously lived notably ascetic or piquantly naughty lives. In consequence, when someone bought a painting by a well-known artist little matter the subject, he could feel that he was purchasing a bit of the artist's life, in fact, a piece of the artist himself. In a desperate effort to describe content in art a large collecting public is following a similar pattern today. If some artists shy from creating their own stage settings, the active dealer will gladly oblige. However it is brought about, it is a deceitful escape from self-awareness. We are all too willing to use the artist and the work of art as simply the means for an extended popular melodrama. As a result, both art and artist are rendered trivial.

We are faced at the moment, then, with two deeply rooted, rarely examined and often confused attitudes towards art and its meaning. One would have it that meaning in art depends on context, and context can be studied as an external phenomenon. It might be biographical or "spirit of the times," but in any case it lies outside of the work in some manageable zone. The other maintains that meaning lies within the artist himself, cannot fruitfully be discussed or explained, and can be apprehended only by becoming the artist or at least by going through the motions of becoming an artist. Even in university departments of art these two disparate attitudes are ignored or expected to get along together. In many instances the history of art lives an uneasy sort of existence in a department devoted primarily to the training of potential artists, and no one knows exactly what it is doing there, least of all the artists. There is even a strange notion that art historians and artists should share the same basic training. The relationship is usually antagonistic because the artists suspect the historians as parasites, and the historians disdain the artists as unintellectual. They have little to say to each other, and taking the same courses tends to emphasize the differences instead of providing the hoped for means for communication and unity of understanding. It seems rarely to have occurred to administrators that this heady philosophical union of the arts is basically unproductive and physically awkward as matters now stand. There are grave fundamental reasons for the lack of communication between these two very different interests in art.

In recent years, in the uneasy realization that many art students were not absorbing enough of the intellectual stuff of art, the history of art has become a mandatory study in the hope that it can effect a community of understanding. Since it is looked to as a kind of savior of art education on one hand and as a suspect, sterile study by many of the young forced into its clutches, it is worth considering just what a course in the history of art is now likely to be, what the history of art in the United States has at this point become.

III.

In the first place it must be remembered that there is no such thing as *the* history of art. There are, rather, histories of various aspects of art. This is a necessity, of course, if art embraces as many different kinds of things as I have suggested. Any definition of art, however, recognizes two necessary elements for discussion: an object or form, and a response to the object. An art object separates itself from other objects on the basis of a peculiar response, while the response, in turn, is called into being by the nature of the object. Over the years, either aspect may become obscure. The physical object may change its appearance through decay, damage or encrustation and the significance of its subject matter or the suggestion of its forms may lose its currency. A major goal of the history of art is to wrest both aspects from obscurity and reassociate them, restoring content to the form and, ultimately, restoring the work of art to the continuing realm of artistic experience. In one sense, the historian by placing the work accurately in the past, restores it to a place in the continuing present.

But it must not be assumed that all activity listed under the heading of the history of art leads directly to this unified end. It has become a field of many specialties and separate directions, and as in most such cases, the specialized part occasionally forgets that it is not the whole. Some specialties are easier to apprehend than others and are consequently easier to teach (easier to teach usually means easier to examine) and thus more commonly represent themselves as a totality. But this is a poor basis for granting precedence in planning education in art.

The most rigorously disciplined of the various directions the history of art has followed might best be described as the history of the objective aspects of "art objects." This has drawn its tradition from the venerable field of archaeology, its methods apply to the present as well as to the past. Basically it consists in the assembly of a number of objects distinguished individually and by class, their careful description, and their organization into a sequence on some determined principle so that they form a continuity or ordered unit in our knowledge. The history of the object has become an essential part of all are historical training and has employed the most advanced methods of objectives research. It is the basis upon which all history of art must be constructed. Furthermore, when it was finally approached with thoroughness and system, as particularly since the last quarter of the nineteenth century, it added much not only in terms of objects but in terms of our capacity for making visual distinctions. We became aware that, if it was necessary to distinguish between the work of a master and the work of a copyist or follower, we must begin to make discriminating visual judgments of increasing specificity. Some of the stories that most fascinate the public come from this kind of study which takes on occasionally the excitement of a well planned mystery story. It has also provided the basis for sound conservation of works of art, removing as far as possible this important activity from the domination of contemporary aesthetic preference and caprice. Moreover, it has provided us with ever new material from the past, a whole range of forgotten and neglected works that afford new pleasures and understanding.

When considering a beginning program for the general viewer, however, it is wise to consider how far such a procedure goes, and what ends it serves. While it is, to be sure, an essential and basic study for the art historian and should be regarded with care by the conscientious critic, what in general is the nature of the experience it provides? While it sharpens the eye in making distinctions between one work and another, it does not necessarily draw attention to the qualities of any one work, except as it takes its place in a continuity. As an isolated skill it has nothing to do with aesthetic values or artistic content. In fact, it must guard against any prejudice of personal taste. In actuality, of course, the historian of objects is prey to many suggestions in the way he sees and how he organizes his material, but his ideal is the establishment of the object in its original form and context much as the literary historian tries to establish the authentic text of a Shakespearian play. That this does not provide the totality of history is quite evident; the end product of this research is the work of art ready to be apprehended and valued. Nothing is said of the problems of apprehension or the embodiment of idea; significance in this kind of history is determined by the work's place in a chronological chain.

Hand in hand with the history of objects has grown another kind of history which sometimes is confused with the former. This is the history of forms or, as some like to consider it, the history of changing perception. Although it has its origins in the early stages of the discipline, it came into its won in the early years of the twentieth century at a time when formal concerns were a major interest also of artists. The formal aspect of a work of art became the decisive feature in organizing groups and chronological sequences, the fact and nature of the formal change being the major content of the study. While formal distinctions had always been of note, they were usually regarded as relative to skill or taste. With the writing of men like Wolfflin it was not a matter of relating the object to some ideal form established as a criterion of cultural level, but simply the study of change as reflected in form. The problem of artistic volition or even of the specific artistic content of an individual work was peripheral to a description of change.

To make this study possible, it was necessary to create a vocabulary for formal happenings, and this Wolfflin did with extraordinary effectiveness. It is a rare historian who does not find himself using Wolfflin's terms whether he believes in his historical categories or not. But useful as the words are, they eventually limit the very perceptions they initially serve to introduce. In fact, the words are an integral part of the theory that produced them and have a way of leading back always to a contextual conclusion. One is not concerned with the effect or intellectual implication of "linear" form in Botticelli, but with its belonging to the fifteenth century.

As fascinating as such a study can be, the history of art as a history of changing forms is a history devoid of artists and tends, as well, to be devoid of individual works of art. Certainly there is validity in studying works of art in this way, but one must be aware of the danger involved, especially for the beginning student. In constructing a history by assembling forms into a super, synthetic form, the historian is in effect constructing a work art of his own which has its own formal definition. At times this new work of art, although satisfying in its own right, does violence to the works that compose it. In fact, it sometimes runs counter to or substitutes itself for any single work. When the Renaissance in Italy is described in terms of certain kinds of forms and formal relationships, a kind of metaphysical form emerges, an ideal Renaissance form, which can determine how we see an unfamiliar work of the period. We seize at once upon those general qualities it shares with the ideal, neglecting those aspects which mark it as a particular work. A knowledge of the forms prevalent at the time is certainly desirable in distinguishing between what is typical and what is unique, but the act of distinguishing typicalness should not constitute the goal of artistic analysis, unless history itself is to be the ultimate work of art.

There has for some years been a strong reaction to the history of art as a history of forms, to talking about works of art as if they were flowers on a historical tree rather than creations of individual artists. But the reaction has moved in very different ways, seeking solutions to a wider understanding in diverse areas. One method, which has not had much following in the United States, has tried to give substance to the formal schemes, such as those devised by Wolfflin, by associating them with the history of ideas, with equally generalized world views. However, the generalizations drawn by means of this kind of study have been little more satisfying to those who have objected to the history of forms, than the history of forms alone. To carry on such speculative research demands so great a knowledge of literatures and arts, so continuous an application to comparative values, that many scholars doubt that it can be pursued with any degree of accuracy even if it were desirable. Certainly to hand out the tentative conclusions reached by such historians to beginning students would be to deal wholly in verbally framed abstractions.

The two major answers to art as a history of objects or art as the history of forms have been of two very different forms. Probably the first in popularity, especially with students and the public, is the study of the interaction between social systems and art. Those who have followed the study of art and society have objected to the notion that change in art is self-willed or simply the evolution of formal perception or taste. They maintain, with varying degrees of dogmatism, that art is the manifestation of a social condition, and to understand change in art one must look for the source in a changing society. This approach may be dogmatic, as in most of the studies following one or another system of historical determinism, or simply descriptive, which is rather less frequent. It has the virtue of concerning itself with ideas to which art contributes, although whether or not the ideas are basic to the works of art might be questioned. If there is a casual interplay between art and society, and there most certainly is to some degree at least, the study of art can serve as a useful key for the study of society. It is precisely this that most such studies do: art is used to give evidence of and and illustrate the nature of social condition or change. But such a study is an examination of society through art and belongs properly to the social sciences where it finds its proof and its function. Its applications are too general to be of much help in understanding the complexity of an individual work of art. The very fact that the most useful works for this kind of an undertaking are those of minor popular artists, not great masters, should make this clear. A work is significant to such a study because it is socially revealing, not because of its artistic quality.

Although we often fall into the language of the social history of art quite without intending to, the social sciences have insinuated so many of their principles into current speech and thought, the study itself is not for the unpracticed. The initial drawback, so rarely faced by the social historian, is the difficulty in looking with any degree of accuracy at works of art from the past. There is a popular assumption that to look at a work of art is an uncomplicated procedure and that what one sees he can directly understand. If a man paints peasants he obviously is interested in the lower classes of society. Such simple judgments are more often false than true; the difference between the peasants of Boughereau and Courbet is enormous but is not to be defined by subject matter. Millet would further complicate the picture. Before a painting can serve as a social document it must count as a painting which means that it must be studied by all means of comprehension. The speculation about art and its social affinities is a study only for those who have gained considerable facility in responding to works of art of various kinds and in various modes. It is not for the innocent eye, no matter how seriously motivated the brain.

The second strong reaction to the history of art as a history of forms is that which concerns itself primarily with iconography, or, in its more penetrating reaches, iconology. An iconographist, as he has come to be called, tends usually to be in outspoken rebellion against those whom he considers to be in any way formalists. Angry with the early twentieth century tendency to ignore subject matter in art (Clive Bell would be an example, although it was also a tendency among a major group of artists), he has rightly sought to restore the subject matter as a legitimate part of artistic content.

His activity in this field has been of extraordinary interest and importance, revealing ideas and associations from the past that would have remained closed to the modern mind. He has forced us to realize that no matter how we try, once a subject is recognized in a painting it becomes a part of the experience of the painting, and to talk of the work in terms of "pure form" is simply self delusion. Like the archaeologist who restores the work to its original form, the iconographist attempts to restore its literal meaning and the significance of its symbols. To make judgments without this knowledge is as faulty as to judge a work stylistically on the basis of later restorations. He further works to determine how particular subjects were regarded at a given time to understand the contemporary logic behind the choice and use of the material. He strives, in other words, to add to the physical dimension of a work, the intellectual environment that surrounded its conception.

As in the history of art objects, there is much in this search through archives and obscure sources to determine the true meaning of a puzzling depiction that resembles the detective novel. It is a fascinating pursuit demanding careful attention to detail and an extraordinary range of knowledge. The study provides an ideal field for the agile intellectual manipulation of material and opens many doors into the processes of past thinking, doors leading into a whole new realm of literary and philosophical speculation.

The iconographist's rebellion against the notion of art as the history of forms, however, has sometimes led him to overstate his case. Either through a preoccupation with his own methods or through a deliberately cultivated prejudice, he often tends to ignore form as a communicative medium except in the most literal sense. When he recognizes marked formal differences, his inclination is to organize them into a scheme which, given a proper term, becomes in itself an iconographic element for a particular tendency, place or period. His remains then a very special and partial view of art.

If one were to have to answer the question, then, of what is the history of art, he would have to say it was all of these things, carefully balanced and modified to suit the case at hand. While the specialist may be justified in following only one of these directions, he must do so with consciousness of the other possibilities. For the layman to become absorbed in only one of these elements without realizing the range of the others would be to provide himself with a distorted view of history and inadequate experience of art.

IV.

While each of these studies has its own value and interest, each its own validity, faced with the problem of a general curriculum in art, which can one chose as of most lasting use and import to the general student? Furthermore, if more than one approach can be included, where does one begin?

I am aware that one virtue the history of art holds for the curriculum planner regardless of methods, is its seeming to have a built in structure: one begins early and ends late, filling in with as much as the time allows. However, I can see little lasting advantage to a "coverage" course with its persistent half-truths and begets, even if the student could absorb and remember more than repeated studies indicate he can. While it may be a course that teaches well, it is not likely to be a course in which the student learns well. As a learning process, the early to late system (or its reverse, which is a perennial novelty) does not make much sense unless one is teaching only a historical formulation for its own sake.

We are likely to feel in considering an extended curriculum that knowledge is knowledge and how it is acquired is of little importance. But in the arts the way the knowledge is gained is a part of the knowledge itself; how we find out is an inseparable part of what we find out. This is another way of saying that the content of art, although it is not the sensuous experience itself, exists only within the sensous experience. It cannot, like a scientific law or a physical discovery, be abstracted.

When faced with the problem of imparting as much knowledge to his students as possible, a teacher is likely to look back over his own mass of information and the conclusions he has reached (or which he has taken from helpful sources), organize them into a defensible system, and deliver them in as neat parcels as possible to his eager class. The perceptive student must then reach back from the conclusion, from the conceptual system he is taught, to consider the works from which the system was drawn. The works of art become illustrations of the system rather than the system's being a temporary means for holding together a group of works to be studied. What the unenquiring student does I need not dwell upon. In such a procedure, every work of art becomes the example of something else, and it is the something else that is being taught.

There is another flaw in this method of teaching packaged history, a flaw that we earlier detected with the social scientist. It is assumed that the process of seeing, of looking with attention, is far simpler than it really is. As a matter of fact, it is much easier to teach a verbal formulation than it is to develop a student's capacity to see discriminatingly for himself. This obtuseness is the product of education, not a natural failing. In one sense, the whole process we call maturation is characterized by, as much as anything, a systematic blunting of perception. It is a long drawn out process of learning not to see, or at least to see only what one thinks he believes. There is a reason for this, of course. If we faced the complexity of our adult world with the questioning wonderment of a child (an attitude Baudelaire recommended to the artist) we should likely be engulfed and very quickly driven mad. Our defense is to draw from the continuous experience of sense the qualities we need to form concepts which can simplify the range of phenomena and allow us intellectually to control it. Concepts thus formed set limits to what otherwise would be an unending flow of constantly changing experience.

There is nothing wrong with this procedure; it is basic to learning and intellectual survival. But the nature of the concepts we impose on our perceptual world should be looked at with care to determine whether they truncate the experience or provide for ever more subtle nuances in perception.

To make the implications of my point clearer, I should like to paraphrase -- quite out of context and without obligation to its other meanings -- a formulation of Henri Bergson. He recognized perception as by nature continuous, not in itself subject to "past," "present," or "future" but characterized only in terms of temporal change itself. Although when we speak of time we habitually refer to its divisions, time itself is as uninterrupted as a flow of melody or the wave of a hand. Faced with the reality of living wholly within time -- that is, within continuous change -- we build ourselves spatially defined fortresses outside of time to which we cling with desperate determination. This is a normal procedure, as I have said. But it is easy to slip into the belief that the spatial confines -- the fortresses -- are the real world and the time, change, is only the periodic interruption.

We like to organize history, for example, as a series of discrete spatial units with their own internal structure. In between we detect "transitional" passages of change. We take an academic delight in fighting over the boundaries. As a result, we force ourselves to minimize persistent change in a period we have agreed to define as stable, and to overlook aspects of positive character and stability in the so-called "in between" areas.

Similarly, we like to organize our aesthetic experiences into defined spatial bins. Once we have looked at a few paintings for example, we feel competent to speak of "development," "classical phase," "transitional" with the compacency of stating a fact, never stopping to ask ourselves why this and not a different structure.

To return to Bergson, if we think of perceptual experience as continuous time, we can describe a concept as defined space which is outside of time and thus immobile. Carrying the metaphor further, we might conclude that the only relationship defensible to the modern consciousness would be an interrelationship of space and time, by which is suggested that we must continually formulate and deal with concepts, yet realize that it is equally necessary that the concepts themselves continually change. The constant is the flow of experience in which we are engaged, not the form we make of it. Our concepts are working hypotheses, not laws. We should not teach our students concepts already frozen, but the discipline of concept making.

The proper place to begin a study of the history of art is with the best document we have, the works themselves. The student must first learn honestly to face up to his own responses and judgments, feeble as they may be at the beginning, and not be given the opportunity or means to substitute somebody else's concepts. It seems to me that there are three stages to the initial study in the field: the first is the student's recognition that he can and does respond to a work of art; the second is characterized by his efforts to describe the nature of the response; the third, which follows necessarily from the second, is the attempt to link the particular nature of the response to the physical nature of the work he is studying. This is to move consistently from the experience to the concept, which emerges from the third step, and the concept is based on the student's own experience and framed in his own words. Since it is his formulation, he controls its use; it does not have the force of outside authority and law. In fact, if the teaching progresses fruitfully, he will modify the formulation of his concepts continuously.

What does this mean in practice? What are the kinds of concepts the student should be formulating? At what point does such a procedure become something that could be called the history of art?

It is essential in the beginning of such teaching to pose the problem through the works of art themselves, not by comparing contrasting sets of words. No matter how experienced the historian, he is in dangerous waters if he begins to listen to his own formulations rather than return constantly to the visual works. The earlier a student learns to depend directly on his own observations the sooner he will discover an interest and value in studying a wide range of things. How this is brought about depends on the level of education and the nature of the problem to be discussed. The formula of procedure does not change, only the subtly of the perception and the demands it makes on the conceptualizing powers.

In leading to the history of art one might establish four levels of study. The first might be thought of as devoted to developing the student's breadth of perception as suggested in the three stages above; the second would be devoted to the consciousness of the relationship between sense and thought, of form and meaning; at the third stage the student should be made aware of the different levels on which meaning can exist, of art as a definition of reality; on the fourth level he should begin to put together his varied awarenesses, to group his experience and see them as making sense in historical circumstances. This is not the diagram of a course; it is a suggested scheme of education extending over several years. What we normally think of as the history of art would come last, if at all. In a sense it will have been constructed over the years through the judicious selection of works and topics. If there is time it might serve as a consolidating course.

While no one is surprised at the need for ear training in music, the idea of eye training is likely to sound bizarre. But thought should be given at the earliest stages of education to expanding the child's perceptual range. From the standpoint of the historian, much that is common practice with children in this respect is not only not helpful but of lasting damage. I might cite as one example the child's introduction to color. For well over a generation, color in school art classes (as well as in pre-school activities) has meant prismatic color, at first just six or eight but eventually innumerable colors in between. This was an inheritance from the theories dear to the Neo-Impressionists and becam standard in art academies by the 1920's. A kind of morality has been attached to "pure" colors, helped along by the theories of Mondrian, the Paris Purists, and others. The theory maintains that these hues form the basis for all others, but practice quickly proves that in matters of paint they do not. Again on the basis of theory, the child is taught the scheme of a color circle and is led to suppose that all harmonies are derived from it, confusing invariably compliment with complement. The result of this schematic teaching can be seen all around us, in the glaring advertising, the unpleasantly characterless "color schemes" in interiors, and the general lack of subtly in making color distinctions: green is green and blue is blue. Rather than developing the realization that everything has color, color often too complex to name, we inculcate the idea that color is only of significance when relatable to a prismatic sequence.

This limiting of color consciousness has grave significance for the effective viewing of past art, quite aside from its permitting a gross tolerance of bad color reproductions. An eye trained on this dazzling fair, and a mind trained to ignore that which cannot be named, are likely to find little to respond to in the color of Carravaggio or even Titian. Quite possibly only primary colors appeal to the primary child, but I am sure that he can early be made aware that color in nature as well as art is rarely so crude and has other charms. Theoretical color mixing belongs in general science, not in art. The child should be encouraged to interest himself in all manner of color and textural combinations, never disassociated from preference or emotional overtones. He can worry later about the theoretical basis for their differences.

Part of the problem in this earliest stage of art training is brought about by the fact that too often the child is limited to what he can do himself. While that may be all that interests him in the very beginning, very early he is capable and eager to respond to experiences beyond his own capacity to create. In some more enlightened programs it is at this point that he goes with a group to the local museum to look at some paintings. This marks the beginning of what I have called the second stage, and calls for restraint on the part of the teacher. This is not the place to begin to enforce the unexamined cliches of art history. It does not matter that Monet was part of a group called derisively "Impressionists." The student should be concerned with how the painting makes him feel or what it makes him think about, and what this has to do with what the painting looks like. Subject matter should not be ignored and might form a kind of norm. Two or three landscapes not too different in scene, by Monet, Constable, Van Gogh for example, might prompt the student to recognize that paintings can make him think and feel differently about similar things. He should be encouraged to expand on the differences in feeling, both in speaking and writing. This is his way of confirming a realization once it is effected. The idea of motion is a useful theme for this purpose: a sculptured T'ang horse and one by Remmington, a Lascaux cave painting and a race horse by Stubbs, a mobile by Calder and an energetic construction by Tinguely. The theme in itself is less important than its leading the student to expand the range of his awareness, to formulate his ideas clearly, and to realize that the way a work is done has consequences for the way he thinks about it.

At this point it might be useful for him to try to draw aspects of the work he is studying in order to sharpen his vision of it. This kind of copying is no worse than the surreptitious imitating of calendar pictures or comic strips which he normally engages in. He should become concerned with pictorial composition, not as a form subject to rule, but as an organization expressive of content. Technical matters such as perspective and its various uses (and non-uses), the implications of light and shade, etc. can be worked out in a combination of practice and looking. Also material differences such as painting procedures, print techniques, cutting modelling or constructing sculpture, or simple aspects of architectural construction should be considered at this stage of his education.

Architecture should not be omitted from these studies because it is difficult to discuss in the classroom. The student should develop a consciousness of space as an enclosure or sequence of enclosures, space as an organization of things, or space as a continuity. He should be made aware of the architecture that surrounds him, good or bad, but also by extension something of the range of past architecture from the massive temples of Egypt to the mysterious domed presence of Hagia Sophia. These past works should not be regarded as representatives of their times (this speculation comes later) but as representatives of architectural experiences.

Many of the problems I am here talking about may have a familiar ring. They are closely allied to the way art is studied in the "art room." The questions asked and the judgments required are not far different from those that might concern a student involved in the practice of painting and design. This is quite intentional. At this stage the association between what the student does manually and what he sees should be close; he should not be encouraged to see art as something rarified and remote.

As an art historian I cannot quarrel with the principles underlying the present early steps in art education in the pre-school and early elementary grades. In practice I could wish that the study might provide a broader base of perception along with its therapeutic and recreational goals. But there comes a moment when the child's mind outstrips his hand, just as in literature he can follow and enjoy a story that he could not yet write nor probably read. This does not mean that he is ready to surrender his manually active pursuits for more receptive ones. It simply means that he has begun to distinguish between himself and the world at large. As adults, most will have little to do with building works of art in any immediate sense; creativity will be recognized as more an act of mind than a turn of hand. The student should begin to move towards formulating that adult viewpoint at this early point in his educational career. Drawing upon perceptual experience gained chiefly through practical exercises, he should be led to discover refinements of these experiences in major works of art. These should be drawn from any or all periods, always including the contemporary. As he progresses, the tasks he performs manually should be more closely allied with discoveries he can make in works of art, so that, while he may retain the satisfaction of physical accomplishment in his manual studies, he will realize that their ultimate worth is the understanding they afford in looking at master works. The end of the exercise shifts, then, from "self expression" to the expansion of self in the understanding of works of art.

I realize that this procedure of transferring to the artist the responsibility of creating art runs counter to a cherished sentiment stemming from the early Gothic days of the arts and crafts movement, that in the ideal society every man is his own artist. So far as I am concerned this is not an attractive ideal at all, if taken literally, as we have been taking it. The art that has meant the most to people in the past has been created by individuals who have lived at a level of single-minded intensity unthinkable and hardly advisable for the ordinary citizen. We have all profited from their devotion and from their courage in destroying the limitations of conventions of which others were unaware. I should not like to relinquish the thrill of these revelations in exchange for a complacent society of Sunday painters.

There is such a thing as creative looking as well as creative doing. That takes place when what the eye sees stimulates the mind to formulate anew or, as one critic said almost a century ago, stimulates the imagination to the point of productivity. Creative doing in the school art program should gradually cede precedence to creative seeing; the manual activity that started for the child as both art and craft becomes now only craft, while art becomes an experience challenging his processes of thought and his core of basic values.

The third stage that I have suggested is the most telling in this transition. At this level he should face the realization that the way a work of art is presented is in itself a way of thinking. For example, the most common word in vulgar discussions of art is "realistic." In the history of art the word is meaningless; every artist of every period considered himself a realist in one sense or another although in the nineteenth century the word took on a meaning all its own. In an importance sense the history of art is the study of varying definitions of reality. One of the most "realistic" arts, if one should wish to be literal, is Egyptian: it leaves little to the imagination and makes no pretense at illusion. When an Egyptian artist created a beautiful shape it had its own vital existence, its own quality. Yet the early nineteenth century definition of reality as opposed to thought and understanding, force us to call it "stylized" or give it some other devitalizing term. On the other hand, the painting and sculpture of ancient Greece is very different, demanding a kind of empathy with an internal physical order that cannot exist in the Egyptian. It is no more real; it is only concerned with a different definition of reality which the Egyptians would likely have dismissed as transient and hardly satisfying. A Chinese brush drawing, a Southern Sung landscape, reveals an entirely different world from that of a Hobbema or Ruysdael.

What I am suggesting for this stage of education, I suppose, is the study of a variety of modes of thinking about and judging human activity and the world in general. It should not be a chronological series; the suggestion of a development towards some desired end distorts the study. It should be, rather, a series of problems arranged in the order of their increasing demands on the conceptualizing ability and their challenge to thought. And it should not sound to the student - as I have made it sound - like a philosophical exercise. On the surface it might be presented as a course in portraits, landscapes or narrative paintings (which would have the advantage of engaging the student in some careful consideration of subject matter). It might be a course in sculpture. One quality it must not omit: a part of its material should be drawn from the present.

It is at the fourth stage that the previous training begins to take form as a larger cultural study. Rather than being looked on as a coverage course in "art history," however, it should be thought of as a grouping of previously gained knowledge on the basis of chronology and cultural unity. I say this because history is too often looked upon as a series of becomings, and I do not believe that this is a useful consideration at this moment. A student may realize that a concern for the "ideal" which he has considered earlier takes its place in late fifth or early fourth century Greece or, in a very different way, in Tuscany in the fifteenth and sixteenth centuries. The desire to record and give permanence to the particularity of things as they appear is encountered in Rome - so different from Greece. A somewhat similar idea became revolutionary in the nineteenth century. The student should be encouraged at this point to use collateral material, especially literature and theory contemporary with the art. Freed from the notion of covering the art of all epochs and areas, an impossibility at the outset, one might design a course around two distinct epochs or cultures taken up consecutively. Some thought should be given to the possible inclusion of Far Eastern, African, or early Middle-American art, but precedence should be given to the arts of the western tradition since they are basic to so much that the student sees and things. The student might well be offered optional courses; there is no point in insisting on his covering everything. His future education will be served better by an experience in depth than by an accumulation of information he will not retain.

The most sophisticated courses feasible in such a program would be those centering on a single artist, on Goya, Picasso, Frank Lloyd Wright, etc. In such a course the student must distinguish what is pertinent to the study of art and what is simply biographical. He would look towards the clarification of the "artistic personality," as Croce would have it. Beginning with the work of one artist the student would early realize the need to move outwards to look at the work of his contemporaries, his background, etc. He would note the initial formulation of the artist's ideas and the changes that took place throughout his career. He would be aware of a single artistic personality manifesting itself in various media and under various circumstances. But this kind of course should be reserved for those students most capable of the study and who have a particular interest in art. I doubt if it would have value as a required course for all.

V.

The program I have been discussing has been directed towards the intensification of the experience of works of art. By dwelling single-mindedly on this one kind of training I have not meant to imply that works of art should not appear in other parts of the curriculum, nor that there should not be courses in the practice of art for those students most talented or interested. Many of the considerations normally associated with courses in the history of art - for example, art and the social order, art as an indication of cultural development or as a manifestation of national character etc. - might better be taken up in courses in social science, history, or language. That is where they properly belong. One might hope for two things: that with their preparation in dealing with works of art, students could deal more effectively with works encountered in the context of other courses; and secondly, that teachers of such courses, aware of how art was being taught, might find more meaningful ways of incorporating art into their studies. There should be active cooperation between teachers of art and others who may be making use of works of art. I should propose preparing taped slide lectures dealing with epochs or topics germane to other studies in which the works were approached in a manner not contradictory to that used in the study of art. This cooperation would enlarge the dimension of the study both in terms of works looked at and in methods used. This should not be considered only a peripheral aspect of the program in art; it is essential. It is an important additional bid for the reinstatement of art as a serious humanistic study.

Historical method as such had also best be left to courses in political and cultural history. Although such problems are of interest to advanced students in art, such as those studying the works of a single artist, problems of evidence, conflicting viewpoints and formulations are not of the greatest relevance to the general student body. One drawback is that they must be taught by people with some advanced training in the history of art; where such teachers do not exist it would be wise to let the matter rest. Advanced students might be referred to a few good books.

One question that constantly arises in considering programs of this kind that devote much of their time to individual works of art or groups of works organized on other than a chronological basis, is "wouldn't it be better for the students to know more about the context of the works of art before they are asked to discuss them?" Obviously I should prefer to reconstruct the context through the works of art themselves rather than to pretend to do it with other means. Every work of art is associated with two quite different contexts: the context in which it was created and the context in which it is encountered. We often forget the importance of the second, assuming that we can apprehend the work "objectivity," and consider context only that which we can assemble around the work as contemporary with its creation. Ironically, in considering some cultures this is nothing more than a distillation from other works of art. I am suggesting that these two associations be kept distinct. By developing the student's awareness of his own perception, at the same time stretching it to take in a wide range of material outside of his immediate contemporary experience, there is less chance of perverting the understanding of the chronological context when it is studied. Approached in the reverse order, the external context is likely to be used as a mask for the internal, serving not as an aid but as a barrier to actual understanding. At a certain point in his learning a student understands this distinction and can approach the work from either direction, depending on the nature of the work. In fact, at a particular stage in his education a student seeks knowledge of the external context to verify his own responses, not to substitute for them. This is a happy stage of achievement.

Then there is always the question about "historical terminology." Would not the schools be performing a service in introducing a student to the words most often used in the writings on art? It is true that we have developed an elaborate vocabulary to keep history in line, and words like Romanesque and Renaissance are useful for general communication. They should not be left out of the study but should follow rather than precede a study of the works. The term should confirm the experience, not direct it. Unfortunately, such terms cannot be explained logically because, for the most part, they were not logically created or were initially applied on bases we no longer consider valid. They came into being at different times and, although used as if of equal kind, often refer to quite different categories. At best they are catch-all words for indicating a rough chronology (some, like Baroque, are quite misleading in this) or the gross classification of "styles." Students will use them whether or not they are introduced in class and should be helped to understand their limitations - all "gothic" buildings do not look alike, etc., nor are the dates of "periods" fixed. Terms for major philosophical directions, such as the ubiquitous "classic" and "romantic," should not be taught as representing periods or special styles, but should be related to the kinds of distinctions taken up in stage three. They represent attitudes that may help in describing the motivations of artists but do not direct or denote one particular set of forms. The "Romantic Period" - regardless of how it is dated, on the basis of English, German or French literature and art - spans many divergent strains in art.

Obviously, as the study of works of art becomes more complex, there is greater need for an agreed upon vocabulary, and it should be developed or supplied as the need arises. Words like "ideal," "natural," "particular," "illusion," "evocative," etc. should find meaning in the second and third phases of the program - and they should not always have the slippery suffixes "-istic" and "-ism" attached. Words should be used with precision once they are introduced. This is a major aspect of the discipline afforded by this kind of training.

What I have suggested in this paper is the reconciliation of the divergent tendencies I described at some length at the beginning, not by placing them side by side with no bond of communication in the hope that the two exclusive specialties will cross fertilize, but by allowing one to grow towards the other without losing its own essential value. In fact, I have insisted that the artist and the historian be more clearly separated than they have been, facing up to their different goals. But I have insisted also that the general education in art be neither that of artist or historian. It should draw upon the insights of the artist and the range of experiences afforded by modern history, but should have as its goal the development of the skills, awareness and knowledge that will provide the non-professional with a meaningful and deeply rewarding experience of art. His education should provide him with the key to a language which stretches across cultural boundaries and across centuries as no other language can, and which tells him about himself in terms of others in such a way that he will come to realize his place in a deeply rooted humanistic culture. It is the responsibility of the artist and the historian to bring about this awareness without attempting to form the student in his own image. It is the responsibility of the critic to serve as model.

EXCERPTS FROM THE DISCUSSION WITH MR. TAYLOR

Audience: I am curious to know whether you would limit your concern in the history of art to painting, sculpture, prints being traditional fine arts or whether you consider broadening the field to the interests and experiences of people you find in classrooms now?

Mr. Taylor: I'd be inclined to stick to the painting, sculpture, architecture group and for a particular bias. I think we have gone too far in the other direction; for example, assuming that a creative ceramic form was the equivalent of a painting. Now I am not saying that in terms of value it may not be, in terms of kind it is very different. It doesn't provide the same experience at all. In various parts of the country and at various cultural levels the jump that you implied might make it easier somehow to deal with less formidable objects than sculpture and painting. I think that would be a great advantage. The area in which you might very wisely be able to use, let's say furniture, is in a midle-class area in which people are quite conscious of their surroundings. Then, all you can do is make them notice stylistic differences or qualitative differences amongst various chairs and let them go home and raise hell, but I don't think you can always do that, you see. In a simple surrounding, that's hopeless.

Audience: I wasn't suggesting that you should do that.

Mr. Taylor: There's nothing wrong with it. I have found occasionally, for example, it is extremely useful and it is quite an eye opener. Most people don't look at chairs with sharp enough distinction except if they are "Danish" or"made in South Africa". Take a group down to the Art Institute and look at some 18th century American chairs, early 18th century American chairs, and have them try to tell me what seems to be the most characteristic aspect of the chairs; and they think it is silly. Whoever heard of talking about a chair that way? Even looking at the turning which may be elegant. Then move along and look at another batch of chairs, and they say: "Well, the same parts, the same legs, and the same stretchers, etc., but they work differently." But why? Well, look at an American imitation of a Chippendale which is busy. The legs are coming up to say hello to the back, and the back is leaning over to be friendly with the seat, etc. In order to look at the turning, you discover that there needs to be a sense always of some continuity. Students gradually begin to see that there is a different principle. You know, there is a different feeling somehow underlying the whole thing. They look at another chair, and they realize they gradually can begin to make distinctions. This sometimes is really quite astonishing. Much more successful than looking at paintings, which they have been taught is "art". This is especially with people coming from progressive schools where they have been fed on ART along the line. This shocks them into seeing again, and they can then gradually get back to looking at other things, too.

Audience: Would you expect that this can be taught?

Mr. Taylor: Surely. What I have been saying goes back, in a rather crude simplistic way, to what Mr. Villemain was saying this morning. You can think visually. You can try to train people to realize that what they see and how they see it is really a way of thinking, and you can do this with a chair. When you look, for example, at a lovely couch with Madame "X" on it, you know from the 1800's, this is a way of seeing it. You quietly look at it and a little leg comes up and touches a part here and goes up, etc. Before long you are spelling out a way of feeling. This design which of course is spelled out that way in 1830; but there is a different way of thinking and feeling about this thing. I begin to see then that even putting the legs on a chair is a way of thinking, a way of judging, a way of sharpening your perception. When you go into a building you don't say it is all vertical and all horizontal because it is obvious that it is all vertical and all horizontal. What you notice is this is an eighth of an inch up beyond that. It sharpens your perception. That's what I mean by beginning really to think with the things they look at.

Audience: You really are re-emphasizing the fact that visual perception comes prior to its cultural manifestation.

Mr. Taylor: Yes, but I'm not quite sure how you mean that. Are you leading me into the psychoanalysis of history or not? In a learning process, formulation must come first for the student and then with the historical terminology. If you are going to talk about the classical, you begin by analyzing a series of works with no fixed notion about where you are going. Gradually you search for a term to explain this particular kind of phenomena. At that point, the student can have the word classical if he wants it. You don't have to worry about his misusing it, you see, because it is his word. He groped for it. On the otherhand if you start out saying "We are going to study the history of Greece. Now Greece reached its Golden Age in the late fifth century. We know this is the classical period, and art before that was sort of growing up to it, and art after that was going down from it, you see". It is not the same thing, not at all.

Audience: You seem to be saying that the importance of studying art is to engage in knowing. This morning we were led to believe that art is not a form of knowledge. Are you disagreeing with the discussion this morning? You say that art tells the student about himself in terms of others and will come to realize his place. Do you call this a form of knowledge?

Mr. Taylor: To answer your first point about knowledge. There are two different kinds of knowing for which we don't have verbal distinctions in English--we don't have two different words for it which I think is symptomatic. I do not wish to indicate that knowledge with a capital K is the end of art. There are two different ways of dealing with material: knowing about and making it a part of yourself. I was suggesting that a work of art doesn't begin to be a work of art until it is made a part of yourself. What happens after that is something else again. In other words, the proof of the pudding is in the eating. Reading a cookbook is not the same as eating a cake. I think the process of eating is in a curious way the content of the pudding. The very fact that you know as you are eating, that suddenly you are engaging in an activity and a very intimate level with others makes you very aware of the quality in you just as you are aware that this is a quality you share with others. I don't think this can be minimized. I don't want to sound like a strong moralist or a social thinker in this, but I do think it is a strong element in art and must not be overlooked.

Audience: To what extent and by what means do we bring students into direct contact with actual original works of art?

Mr. Taylor: As often as possible. Yet, I have one qualification. In the thirties this became such a fad about actual works that we began to depend on anybody who could do a painting as somehow being a better guide to art to the students than looking at a relatively reasonable reproduction of a product of a great painter. This I think is dangerous and false. That can easily be misconstrued and I don't want it to be. What I am indicating is that the training of art is dependent upon the quality of the objects used and not simply the nature of its physical content. Just because it is paint on canvas does not make it better than a reproduction. I'd rather look at a relatively bad reproduction of a fine 1914 Picasso than I would of a painting smelling strongly of linseed oil and turned out but somebody who is motivated wholly by a muscle itch. It's just not the same thing. On the otherhand, all things being equal, certainly the students should be encouraged to look at individual works of art as much as possible. In my own teaching, I have never--as for undergraduate teaching--will never assign a paper that is a lengthy study of anything other than an original work of art. You can look at many images, but for sustained study, I want students to go look at the very best work that we can offer them.

Audience: Don't you think that it is also necessary to have original work in your lecture hall or in a classroom in order that people can get excited about the qualities of these works? It is almost impossible to obtain this in reproductions and slides.

Mr. Taylor: Well, yes and no. As a matter of fact, some originals in a lecture room look like small, damp postage stamps. Many very fine works aren't larger than that, and nobody can see them. I think the best way is to study the work and let the student study it on his own. Then, you can have a lecture in which you might use slides of it and other things and then send the student back to look at it again. I think that is the best way because only one person can look at a work of art at a time unless it is an unusually large work. The physical problem is a considerable one. I think the continuous alternation of original works with reproductions is about the only, about the best we can do because in teaching large numbers of students. By large, I mean anything over fifteen. You can't conveniently use an original work of art. You may even endanger the work of art. The same thing with a museum. You cannot get more than ten people around a painting unless it is a very big painting. Students may be sort of thrilled by being in the atmosphere of lots of paintings around, but they don't see the painting. They have to go back later. I find the most profitable discussions are after you have worn yourself down for an hour and a half in a museum with a bunch of kids. When they are going home or supposedly going home they scatter and begin looking at things in the gallery and lay in wait for you. Two at a time they will trap you in each and every gallery on your way out the door. Now, actually these little moments are probably the big ones. I'm not sure how you program it. No rational man would, but it happens.

Audience: In terms of getting to know a painting or things you are supposed to know about it and some of the other things you mentioned, do you feel satisfied that art historians are being trained to meet this educational need?

Mr. Taylor: No. Of course, my own training is a horrible example. I started as a painter and designer. I took degrees in literature, and I only very latterly took a couple of degrees in Art History. Now, I think most history of art is taught in accordance with at least one and sometimes two of the canons that I set forth for history of art. It depends on the department. It depends on the people you work with. Many students are turned out now wholly held to the history of monuments, to the history of objects. To ask them to discuss a work is painful because they have nothing to say about it except which two objects it belongs between. That certainly is not very helpful to anyone else. That's one reason I say don't just look to the history of art for the solutions to all your problems. I think there ought to be something developed in the separation between the history of art and the training in art. I don't know what to call it, you see because you created yourself a third force here. It is really not art school training and it's not history of art training. I think the separation has been very damaging for both, extremely damaging. As soon as the damage can be repaired, the better. It has to be repaired on all the levels all the way up to the training of the professional historian.

Audience: In your remarks you made the distinction between the making of a work of art and looking at a work of art. I would like you to elaborate on this.

Mr. Taylor: They are part of the same thing. Otherwise, there wouldn't be any relevance in talking of the two things together. The reason I separated them so clearly is that I think very often we establish a system for creating something and assume automatically this will be an equally good system for looking at things. It is not necessarily true. I have seen too many products in schools where students are being taught piously to do all kinds of things. Then, they come out with absolutely no perception either in their own dress or in looking at a painting. There is no application, so the application has to be left to the student. In a way, I suppose what happens (and this refutes something which I said earlier) is that the artist has the impulse to create from any number of possible sources, and this is satisfied by the creation of the object. Once he has created it, this is the completion, as it were. When we look at an object, it is complete. We then somehow work our way back to understand why it is necessary to us. In a strange way, then, the artist has answered a question. We start with the answer to the question and go backwards to find the question that it answers in our experience, not in the artist's experience, but in ours. What I was doing here you see was looking at an object and reading the way I see the object. Now I might assume that's how the artist made it. I wouldn't say so, and I'm very much against people saying when they talk about a painting, "Well, the artist was trying to" -- I immediately stop their words and say no, you are trying to say what you get out of the work because we have all got into this wretched habit of always pretending we are the artist. The sooner we realize we are not the artist the better off the artist and the better off for our own experience.

CRITICISM AND ITS PREMISES

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The first requirement of art criticism is that it shall be relevant to the art under consideration - how correct are its evaluations of specific art objects is of lesser importance. The accuracy of a critic's judgments cannot be determined by his contemporaries, in any case. But the inflection given by art criticism to the general thinking about art affects not only the responses of appreciators of art but the creative attitudes of artists as well. When this thinking is trivial or beside the point, painting and sculpture become the speciality of feature writers, decorators, dealers and speculators in masterpieces.

It is the contention of this paper that in order to be relevant art criticism today must maintain a continuing sensitivity to certain characteristics peculiar to the modern epoch which affect the situation of art, including the outlook, rituals and objectives of those who create it. A mind blind to the radical material, social and intellectual transformations of the twentieth century and their influence upon its modes of creation can only respond to representative modern works with confusion and bitterness. For such a mind, criticism has one purpose: to provide a defensive barrier against new work and new ideas by applying "values" presumably drawn from the great achievements of the past. Criticism so oriented leads neither to intelligent perusal of individual works nor to genuine debate concerning the cultural losses and gains of modernism. It merely drops a curtain of polemics between the critic and the artist and contributes to the estrangement of the public from all art, past as well as present, since only through responding to present-day creations can the creations of other periods be genuinely appreciated.

The following are propositions which in my opinion ought to be more or less explicitly recognized by contemporary critical thinking as creating new problems for art and for art criticism.

Proposition 1: That creation of art in the twentieth century is an activity within the politico-cultural drama of a world in the process of remaking itself. Modern art is saturated with issues and ideologies which reflect the technological, political, social and cultural revolutions of the past 50 years. Regardless of the degree to which the individual artist is conscious of these issues, he in fact responds to them in choosing among immediate aesthetic and technical alternatives. If he chooses one mode of handling line and color he will have affiliated himself with an aesthetic that accepts the obligations of art to communicate judgments of the artist's environment, while a different approach will identify him with the concept that for art reality is that which comes into being through the act of painting. Thus choices having to do with method in art become also decisions regarding the future of man.

In this changed relation between art and history, the automatism involved in a heritage of craft skills has been replaced by acts of the mind occurring at the very beginning of the artist's training. Whether these acts be acts of the artist or of the teacher, their effect is to remove art from the realm of habit, manual dexterity and traditional taste into that of philosophy. The present Seminar is an excellent example of the new situation in which art emerges from theory. What need would there have been for our programs and speculations when everyone knew who the masters were and how they should be emulated? We shall return to this subject of the new dependence of art upon our ideas in our Proposition 3.

The consciousness of standing in the midst of developing events lends urgency to the painter's meditations on possible courses to follow. In the past a single tradition, rather than a selection among possible futures, determined stylistic affiliation. Modern art tends towards separate concentrations of energy and towards conflicts of will rather than toward homogeneity of style and meaning. The historical consciousness also pervades the art museum, the art gallery, the private collection, in the form of attempts to forecast which trends and personalities in art will survive. Art today shares in the general awareness that tomorrow is being shaped by a natural weeding out of short-lived impulses. On its profounder levels, modern art is acutely aware of itself as a participant in the contest to affect the future--as one of powers engaged in giving form to the unknown.

Proposition 2: That the politico-cultural drama has in our century assumed global dimensions and that the artist now works in an environment unbounded by time and place.

Under the unrelaxing pressure of political, social and intellectual development since World War I, local, regional and national traditions have been steadily dissolving and being absorbed into world-wide systems. The individual artist, whether in Tokyo, New York or Sao Paulo, is confronted by the activity of art everywhere, without the mediation of an inherited outlook or style. He is confronted, too, by the constant unveiling, through anthropological and archaeological research, of the totality of human thought, belief and accomplishment.

The almost simultaneous transmission of works and styles throughout the world by means of film and print has brought into being a universal pictorial vocabulary. This communication, however, is restricted to surface approximations. Lacking the scale and texture of the originals, to say nothing of their physical and cultural settings, the reproductions fall short of conveying the experience that gave rise to the art works themselves. Art in the global interchange tends to appear as consisting of various categories of decoration. The constantly augmented mass of art studied in the form of emotionally vacant images facilitates the rise of new academicism based on abstraction drawn from art history. Contemporary art, especially, is dealt with as if it consisted of designs the emotional and social content of which may be ignored. Also, the description and classification of art as artifacts contributes to the formation of a world-wide bureaucracy with scholarly pretensions concerning creation.

Thus the internationalization of art becomes a factor in the estrangement of art from the artist. The sum of works of all times and places stands against him as an entity with objectives and values of its own. In turn, becoming aware of the organized body of art works as the obstacle to his own aesthetic self-affirmation the artist is pushed toward anti-intellectualism and willful ignorance of the art of the past.

Proposition 3: That with the weakening of traditional attitudes, assumptions and methods of handling, styles now originate in abstract ideas and idea-based art movements.

Aesthetic programs have replaced locally admired art as authority and as inspiration. "Every modern activity," said Paul Valery," is dominated and governed by myths in the form of ideologies." The roots of contemporary creation lie not in Nature nor in earlier works of art but in theoretical interpretations of these. The new relation of art and ideas has imposed upon art the necessity for a self-consciousness that has rendered the craft imitation obsolete. The theoretical content of modern art also imposes new demands upon criticism, primarily for the clear differentiation between what may be analyzed in a painting or sculpture and what must be left to the intuition of the spectator as unique and inaccessible to language.

Proposition 4: That with change established as the norm of present-day life, the capacity for innovation and for the renewal of old forms has become a primary value in art.

The centrality of art in our civilization depends upon its role as testing ground of conditions and methods of creation. Imitation of the art of earlier centuries, as by Picasso or Modigliani, is carried on not in order to perpetuate ancient standards but to experiment with the power of the artist to evoke novelty from familiar forms. In our era, art that ceases to seek the new becomes at once intellectually insignificant, a species of homecraft. The nature of originality is open to debate - in fact, needs desperately to be debated. But no disagreement exists regarding the value of the new in art. On the other hand, the dedication of art to novelty complicates the problem of values and exposes art to sensationalism and influences of fashion and the press.

Proposition 5: That the break between the present and the past makes the future opaque and plunges art into a permanent state of uncertainty.

"No one can say what will be dead or alive tomorrow in literature, philosophy, aesthetics: no one yet knows what ideas and modes of expression will be inscribed on the casualty list, what novelties will be proclaimed." -- Valery.

That condition in which the future cannot be depended upon to resemble the past constitutes a state of crisis. Or, if one prefers, a state of permanent expectancy. In such circumstances art takes as its point of departure the effort to arrive at values rather than to accommodate itself to existing criteria.

Criticism, too, must seek its values through particular instances -- works, artists, art movements - rather than through the application of rules formulated by criticism for its own purposes. The modern mind is tempted to end its suspense by affirming complete systems of value, including aesthetic systems. Thus in totalitarian countries, the future course of events is charted and the duty imposed upon art to help in realizing that future. The means that promise to make art most effective - e.g., the idealization of facial expressions and bodily postures - are translated into aesthetic values. The result has been the ruin of art. The same result on a smaller scale has followed attempts in the West to reduce the risks of the unknown through calculating the future uses of art. The following observation of Valery might be adopted as a critical axiom: "Since, henceforth, we must deal with the new of the irreducible type, our future is endowed with essentail unpredictability."

Proposition 6: That vast shiftings of population, both geographically (through migrations, exiles, displacements) and vertically (through revolutions, mass education, equalization of opportunity), have destroyed the historically stabilized character of individuals and introduced the problem of identity, personal and collective, as a dominant theme of contemporary cultural forms.

Art movements in the twentieth century have tended to swing back and forth between extremes of individual self-consciousness (Surrealism, Abstract Expressionism), self-identification with groups (Regionalism, Social Realism) and anonymity (Bauhaus, Optical Art). These rhythms of self-affirmation and self-negation belonging to the dialectics of identity stimulate the formation of new modes of art through opposition, overlapping and merger, as in the rise of Pop Art as a counter statement to Action Painting. Impulses toward and away from identity should be recognized by criticism as providing an essential content of modern art, figurative as well as abstract.

Proposition 7: That ours is an epoch of excavations - archaeological, psychoanalytical, philological -- which keeps emptying into our culture the tombs of all the ages of man.

Absorbing the flood of past art, art in our time continually reconstitutes itself as a theater of revivals. Styles of earlier periods, far and near, from the funerary carvings of the Aztecs to the realism of Courbet, are re-awakened as experiences and as slogans by contemporary painting and sculpture.

Modern art is at one with radical politics and with psychotherapy in its fascination by the abyss of lost forms and powers. Like other significant modes of present-day action and research, its explorations periodically lead it to the verge of changing into something else. Thus modern art often crosses over into non-art and adopts anti-art attitudes. Besides augmenting consciousness, this negative strain acts as a lightening-rod to divert from society and individuals more perilous temptations to self-surrender -- totalitarian politics, drugs, mysticism. The negation of forms and their re-awakening seem to have a profound function in a culture of change.

No doubt other propositions regarding the groundwork of contemporary art might be added to the seven I have sketched. My purpose, however is not to be exhaustive but to give examples of the kind of phenomena which criticism must absorb into its consciousness and its vocabulary if it is to grasp the dynamics of current art production. These are matters which artists think about, and philosophers and men on the street. Unless critical discussion achieves the intellectual scale of our revolutionary epoch, it must be deprived of serious reference and lore the attention of serious minds. In practical fact current writing on art largely consists of opportunistic sponsorship of trivial novelties and of assertions of personal taste for which support is sought pedantic recitals of art history. Mere technical recipes - e.g. shaping of canvases, ways of handling the "edge" of forms - are heralded as if they were ends toward which Giotto and Rembrandt had been striving but with inadequate means. As a result art criticism today is looked down upon by other forms of critical thinking as an unintelligible jargon immersed in an insignificant estheticism. In some measure, this opinion reflects the specialization that has overtaken all learned pursuits in our society. If art and art criticism tended to become ingrown, so have literature, music, philosophy, sociology, history. Thus each feels justified in attacking the others for being excessively engrossed in their own forms. Beyond sharing in this common narrowness, however, art criticism, it must be confessed, consists for the most part of an indescribable compost of bureaucratic promotional copy, theoretical air bubbles, history without perspective, readings of symbols based on gossip and far-fetched associations of ideas, visual analyses which the eye refuses to confirm, exhibitionistic metaphor mongering, set phrases manageable by girl reporters, human-interest coddling of Sunday art-page audiences, in-group name dropping, ritually repeated nonsense.

Against this sum of amateurishness, lack of talent and willful absurdity, the value of values for art criticism must be the effort to re-introduce art into the framework of humanly serious concerns. Such an aim has nothing in common with the popular-culture fallacy that everything concerned with the creation and evaluation of art can be made immediately intelligible to the so-called common reader. The latter is himself a specialist of a sort--a specialist in the lazy intellectual habits cultivated by the mass media--and there is no reason why he should be given consideration denied to other victims of jargon. But art criticism ought to learn to distinguish between writing that deals with the irrationalities, observities, and paradoxes of creation and writing that is merely lacking in sense.

We now come to the "Charge to Art Critic." My remarks may not always be directly responsive to the language in which some of the topics have been formulated, but I shall come as close to them as my way of thinking permits.

The first item of Charge #1 reads as follows:

Identify the range of values and/or categories appropriate to making critical judgments of works of art.

It follows from our premises that the work of art should be evaluated, first of all, as an act performed by a contemporary. It is an energy and skill directed toward the artist's individual appropriation of that in art which continues to be alive or which is susceptible of resurrection. It has the effect also of demolishing styles and images which have turned into visual conventions; in this destructive activity lies its critical and revolutionary role. By displacing works from which vitality has departed, each new painting helps to determine the continuing content of aesthetic culture. It is also an act of unique and perhaps to some degree, original perception; thus, it is an event in the self-development of the artist. To its public it opens connections with other works of art and contributes to an expansion of individual and collective sensibility.

Hence, all categories of experience, past and present, from fetishism to laboratory discipline, are potentially relevant in making critical evaluations. The critic's primary act of judgment consists of choosing the modes of insight--aesthetic, psychological, social, metaphysical--which he regards as significant in the particular instance. For instance, in writing about the paintings of Barnet Newman I found it necessary to dwell upon the quality of his taste, his counter-statement to the abstract art from which he derived, the rigor of his logic, his humor, his metaphysics of the sublime. In connection with Gorky and de Kooning the question of the sublime did not arise, nor did the question of taste seem to merit much discussion. In regard to Jasper Johns, my major emphasis was on his technique and his motifs as responses to Abstract Expressionism and to the presence of the new Vanguard Audience in the U. S. I also noted the changed mood manifested in his later canvases as bearing upon Johns' aesthetics and as a clue to his possible development.

The elements to be taken into account by criticism will vary from artist to artist and from one critic to another. So, too, will the stress placed on those elements and the way all are balanced. Each piece of critical writing represents a synthesising act of the artist in his simultaneous elaboration of form and content. The medium of the critic's synthesis, like that of the artist, is style. The critic demonstrates his competence by his effectiveness in handling his materials, which consists of words and concepts. A critic who writes badly may have deep insights into painting, but not every connoisseur is a critic.

Second Item of Charge #1:

What steps might be taken to overcome barriers and confusions in critical language?

In dealing with modern art, criticism is confronted by a flood of new forms, new motives, experimental attitudes. To react intelligently to these, criticism must test itself and develop new forms of insight and expression (e.g., multiple perspectives, a rhetoric hospitable to the ambiguities and paradoxes of art itself).

Reduction of confusion in critical language and of the barriers between criticism and the art to which it is applied should begin in eliminating abstract universals, such as "harmony" or "expressive form," which can presumably be fitted together to provide a handle for art works of every variety. These residues of old systems of essence should be replaced by concrete analyses in a terminology of action, conflict, intention, creative hypothesis. The technical ingredients of painting need to be re-interpreted in accordance with the psychological and aesthetic functions of line, color, form, etc., implied by the practice of modern masters. An outstanding point of reference in this connection are the teachings of Hans Hofmann.

Charge #2:

Within each system or category, identify the specific concepts and methodologies that make possible critical discourse about works of art.

The art critic is the collaborator of the artist in developing the culture of the visible as a resource of human sensibility. His basic function is to extend the artist's act into the realm of meaningful discourse. Art in our time is itself criticism. Each painting embodies a choice in regard to other styles and works, including the previous work of its creator, and to the possibilities arising from it. Into this dialogue of paint the critic interjects a vocabulary of words. Having thus put himself into the act, not by any means at the invitation of the other performers, he assumes the privilege of responding with a trained rhetoric to the pantomime of the artists. To one gesture he assents, another he opposes, in a third he sees unrealized possibilities.

Can the critic be anything more than the intruder that artists have traditionally considered him to be? If he is the mere representative of a social interest, as for example, the reviewer whose opinions are coordinated with the cultural program of a newspaper or other propaganda or profit-making institution, he stands in relation to art as a species of policeman on the lookout for misdemeanors. He will not interpret art's motives, he will endeavor to keep art in line. His criticism will consist largely of reporting delinquencies--the virtues he discovers in paintings will be of the sort that is held up as an example to the wicked. Such a critic has forced himself on art, and he can continue to be a squatter in it only because there is no way of getting rid of him.

The critic who is to be the intellectual collaborator of the artist, not his truant officer, must possess, above all, a mind engaged by the realities that encompass the painter or sculptor. Besides being a judge of art, he must be a judge of those processes by which art and life are being transformed. His must be a mind with a point of view to affirm; it is this point of view that determines which trends, personages, ideas he will support or combat. An interest in pointing may be the result of chance or temperament. The impulse to criticise is inherent in the intelligence that responds energetically to the existing human situation. It is the development and verbal clarification of this impulse that leads to the calling of critic. Knowledge of art is not enough to make one a critic, any more than knowledge of art is enough to make one an artist. The student whose devotion to art arises out of the wish to avoid reflecting upon his condition as a living person will be a mere specialist, a scholar or a connoisseur, but not a critic. For the latter exists through the deeper and curiosity and the widest practise of intellectual freedom.

The art critic is the outpost of the art educator. He has made his way into the wilderness of values in which art originates. If he is to be of use, it will be by opening a route into the collectivity of artists and to their creations, present and past.

Each critic tends to return to certain attitudes and phrases. For example, I have, perhaps even too emphatically, been insisting that certain concepts relating to the character of twentieth century culture are indispensable to discourse about works of art. I should not, however, like to see those concepts, nor any like them, organized into a methodology. No systematic approach is viable in art criticism. Nor, in my opinion, is it desirable for criticism to mimic the techniques or objectives of science. Let the readers of the criticism find the "systems" in it, if there be one. The critic who resorts to formulas does so out of laziness, haste, or uneasiness about making himself understood.

Since the past no longer enlightens us about the future, values cannot be abstracted from earlier masterpieces and applied as a measure to current art. By the same token, values cannot be abstracted from current work and held in readiness to classify the art of tomorrow. In our time values must be created alongside the art which they propose to evaluate. The intellectual center of gravity of criticism must be capable of shifting with the emphasis of new art. Dealing with creation, criticism must maintain its openness to innovation.

This does not mean that criticism is forced to abdicate before each manifestation of the unfamiliar. Continuity is inherent in events, including events of creation. It is this objective continuity that makes discourse possible. It provides the ground for acts of judgment which can cohere into a living nucleus of values augmented and made more firm by each new encounter with the unfamiliar. The weakness of methodology is that it tends to circumscribe this process of creating value by neutralizing those areas of the imagination which cannot be readily organized. The effect is to pulverize criticism into neatly spaced piles of rhetorical powder--for example, one has only to look to the products of our "methodologized" academies literary criticism.

There are two items in Charge #3; I shall remark on them together:

Can we assume a continuum of maturity and sophistication in critical insights? If so, what are the elements of such a continuum?

There are no grounds for assuming that any particular intellectual qualities will continue to prevail in criticism, any more than in art itself. Forms, terms, concepts are susceptible to an inner erosion that empties them of meaning or changes their meanings, perhaps even into their opposites. Criticism is in constant danger of losing touch with its object, the work of art, or with its own purpose, enlightenment. It can be significant only through the unforseeable entry into it of interesting minds and of writings addressed to real things. Besides experience, intelligence and talent, it demands also courage and independence--and these, too, cannot be counted upon to answer a roll call.

Today, the outstanding menace to such critical consciousness as has been developed is that in place of an intensification of insights and a deeper awareness of problems there will be substituted a structure of bureaucratic assents. Everyone, will be in agreement, for instance, that Van Gogh is a forerunner of Expressionism, that his heritage is subjectivism, "distortion" and thick paint; and that the value of his paintings is to be found in the fierce efflux of something called "personality." Everyone will agree, too, that Jackson Pollock represents violence and self-abandonment and is thus descended from Van Gogh. On the other hand, there is, we shall be told, an art achieved through the rigors of analytical reason, as with Seurat, Mondrian, Albers. Such a collection of received ideas may represent a continuity of sorts--perhaps it is even "mature" and "sophisticated." Its advantage is that it can be handed on to each incoming group of students and that it makes the meanings of works of art as easy to memorize as a deck of cards. But a credo is the opposite of a critical consciousness--and incidentally, not one of the opinions mentioned holds up under analysis: for instance, Van Gogh's passion to seize the reality of the object has nothing in common with the phantasizing of German Expressionists with whom he is grouped.

Along with the replacement of criticism by bureaucratically supported articles of faith, there comes into being a bureaucratically supported art with its own vocabulary of mystification and double talk. In the past couple of years, artists have appeared, to say nothing of dealers and reviewers, who study the advance schedules of leading New York museums as leads to the kind of art with which to identify themselves.

Critical continuity depends on an ever-deepening comprehension and clarification of the tradition of the new. There is, for instance, important research to be done in bringing to consciousness attitudes taken for granted in the modern practice of art but ignored or denied in art's public relations -- these bear on the issue of the so-called revolutionary or nihilistic nature of twentieth century painting and sculpture. The tradition of the new in art is a tradition precisely because it transmits desires,ideas, myths of which the receiver is unaware and which he takes for granted as fact. Within this tradition there exists a continuing strain of revolt -- against society, against art, against the orders of the mind, against all existing conditions of life and work. This strain, though often submerged, is so fundamental to the integrity of art in our time that when it disappears, as in the Soviet Union, creation ceases, and when it is denied or veiled, as in OP art and much of Pop, its absence is discussed pro and con and even identified as a form of revolt against revolt. For criticism to extend itself into the future as a coherent energy will require not only intellectual apprehension of the elements that make up the tradition of the new but an unillusioned responsiveness to its rebellious spirit.

The three items of Charge #4 are:

What relationship exists (or should exist) between art criticism and art historical knowledge; between art criticism and art theory; between art criticism and statements of intent or biography of the artist?

Art criticism today is art history, though not necessarily the art history of the art historian. In discussing a painting the critic reports on an act that falls within the previous acts of the painter and upon an event within the continuity of art. The painter's act could not have taken a place without preceding acts of creation performed by himself and by others; and in estimating the value of the work, the critic considers what it has brought to the history of art, as well as to the experiences communicated by art. It is a truism that all art derives from art. To know what has been derived from whom and in what manner and degree sheds light on the artist's processes of creation, his motives, and the shape of his imagination -- not least illuminating is what he chose not to derive from the works that influenced him.

The critic must, then, be familiar with the art of the past; above all, he must have reflected upon it. But art-historical knowledge has for the critic a different function than it has for art historian. The critic is not primarily concerned with tracing the evolution of styles and arranging works within them. He approaches the work not as an act performed in an interval of past time and which is not ready to be set in its niche within an edifice of finished happenings. He sees it rather as a deed that is still in the course of being enacted and which will take shape through the painter's battle with uncertainties, counterforces, temptations. One might say that the critic unrolls the creation of the picture as an intellectual event in time, while keeping an eye on it as a visual object. In this, his approach corresponds to that of a painter looking at a painting by another artist; he sees it as a complex of situations met, resources employed, leaps executed. Without being aware of it, the painter as spectator imagines himself as a performer; he becomes automatically the original artist. The critic stands in the same line of vision as the painter but he stands further back. For him, not only is the painting "to be done again" in mind; the painter too, is something to be done, that is, to be intellectually constituted as an artist acting and choosing within his medium and his culture.

It is to this end, and only to this end, that he may resort to the biography of the artist, to his ideas and to his statements of intent. He reads the artist's words and interprets events in his life solely in relation to his acts on the canvas. Like the painting itself, they are data from which he constructs the fiction that is the author of the work of art and the key to the full range of its meaning. But statements by artists, though frequently of great value to criticism, are to be regarded with suspicion and never taken as the last word on questions of fact or attitude. Jealous of their originality, artists are prone to certain types of deceit; for instance, American artists, especially, tend to deny their indebtedness to other artists and to art movements which have determined their work. For criticism, this denial of indebtedness is not merely a question of demanding undue credit; it has to do with obscuring the transfer of thought within the community of artists and within the culture of the period. Obviously, this question of communication is too important to be left to the vanity of individuals.

It is a prejudice of the critic that he sees art history backwards, from the painting he is studying to works that anteceded it. (On another plane, there is for the critic no earlier and no later.) In any case, he will refuse to concede that a style can produce art through an immanent drive toward the realization of an idea or form. The scandal of art history is its ability and, in many instances, its willingness to dispense with artists. I shall not pursue this question here, since it is a problem for the historians themselves, one which they have begun to attack.

I shall, however, say a few words about writers who lay down the law to art in the name of art history. Art criticism today is crowded with art historians turned inside out to function as prophets of so-called inevitable trends. A determinism similar to that projected into the evolution of past styles is clamped upon art in the making. In this parody of art history, value judgments are deduced, in advance of any actual paintings, from a presumed logic of development, and commands are issued to artists either to accommodate themselves to these values or be banned from the art of the future. An aestheticism founded on art history yields a club of dogma similar to moralistic criticism in the nineteenth century or political criticism in the Soviet Union.

The deterministic approach simplifies the problem of value and for that reason is seducive to authoritarian minds. To predict the future and thus to be able to accommodate oneself to it, whether as artist, critic, art collector or museum director, seems to offer a means for reducing the hazards of being extinguished by it. To assert with assurance what art must become eliminates the need to analyze what art is actually doing -- and whether its present behavior constitutes a rise or a fall. For the critic, values based on a theory of an historically determined stylistic evolution eliminates the need to explore the connection between the social, political, psychological realities by which artists are moved and through which the work of art affects the spectator. Instead of problems, metaphors, hypotheses, hints, paradoxes, art criticism comes to consist of certainties.

But, of course, prediction in art is impossible and all forecasts of what will be desirable tomorrow are nonsense, fraud or propaganda. For the nature of art is that it is creation -- and the nature of creation is that it contains the unexpected. To predict with certainty what is going to be created one must be in a position to suppress creation. Hitler and Stalin were excellent forecasters of aesthetic trends, so long as their police controlled what was done in the studios. The critic in a free country who maps out the future as if it had already taken place is forced to function with less effective weapons. Yet, even here, prediction in art is not harmless. It is tied to valuation -- while valuation in turn calls for the exercise of power. Historical determinism practiced as criticism misapplies the power of the historian to control the past and introduce order into it. For this distortion art history is of course not to blame.

Yet a practical problem does exist in properly defining the uses of art history, in view of the fact that an academic degree in this subject has become the accepted means of accrediting people for all kinds of careers in art, including that of art critic. The study of art history develops in people the professional habit of tracing the forms and imagery of a work to their influences and sources; also the habit of taking it for granted that doing so establishes the *value* of the work. Uncovering sources is an accomplishment of which the historian is justly proud, and it is not unnatural that he should project the value of what he himself has been doing into the painting. It is not unusual to hear a painting praised as if its merit lay in working out a successful campaign for capturing the qualities of earlier works and transferring them into the present.

Perhaps ways can be found to direct art history toward scholarship, and to develop appropriate curricula for other specialties, including that non-specialized specialty criticism. Both art criticism and art history need to scan more thoroughly their philosophical substructures. Both ought to consider, for instance, the difference between the intellectual origins of art in our time and in earlier periods. Art history as the art historian encounters it in other eras scarcely comes into being any more. Art used to wander on its way, responding to the cues given to it by tradition and chance, until the historian pounced upon it and set it into the order of its time. In the twentieth century, art has lost its innocence. Its naivete in regard to its own history had been replaced by a complex sophistication in manipulating that history. Today, the art historian is dealing with an art that is conscious of itself as engaged in making art history and which, intended in many instances to impress the art historian, especially the art historian turned critic, deliberately takes his prejudices into account. The historian is no longer telling a story of raw events; he is repeating a story told to him in the form of ideas and happenings with which he is implicated. The first requirement in such a situation is to know that he is implicated and to what extent. Both the art historian and the art critic must be wary of responding to a mirror held up to them by the artist for the purpose of arousing their admiration for the image of their own outlook. History in our time - and not only *art* history - is history that is being deliberately tempered with by the object of the historian's study, the history makers.

In the case of art, the prime history makers are painters and sculptors. As indicated earlier, there are writers and cultural commissars who wish to dispute this privilege of the artist and to use him as an instrument for their own art-history making. The attempt to appropriate art history brings about a new kind of conflict -- between the artist and the professional representatives of his public. This conflict is a phase of the conflict of ideas which has characterised the creation of art for more than a century. The style is the man, but modern man becomes himself, that is, acquires style, in a wrestle with ideas and even ideologies. In our time, art arises out of a dialectical tension between an individual temperament and art movements founded on various theories of art. The work is neither personality nor idea. But to equip the future artist, art critic, art appreciator to understand what is being created, art education must familiarize him not only with works of art but with the alternatives over which the campaigns of modern art have been fought. To grasp art in our time one must, for example, be able to identify ideas, both in art and in matters related to it, that are genuinely antithetical -- such as the idea of art as an instrument of the state or of business and the idea of art as individual discovery or creation -- and to differentiate such mutually repellant ideas from ideas that only seem to be in opposition but have a similar approach to creation -- for example, conventional naturalism and conventional abstraction.

Statements of intent by artists illuminate their work only when interpreted in the context of the continuing struggle of ideas in art itself. Read in isolation from the artist's concrete intellectual situation, they will often appear in reverse and lead criticism up blind alleys. For instance, the painter Malevich once pointed out that in the work of a famous medieval icon painter the hairs in God's beard were exactly the same as the hairs on the Devil's tail. This was intended to prove that what counted for the artists was not what but the how. The painter cares neither for God nor the Devil but only about painting. All content is a mere pretext for the exercise of skill and the solution of aesthetic problems. Following this logic - and Malevich did, of course, follow it - subject matter can be eliminated entirely, and everything valid in the art of the present or the past can be translated into space, line, color, design. We arrive at what is called "pure" painting.

By the same type of reasoning we arrive also at what might be called "puristic" criticism or formalism, that is, criticism that evaluates paintings exclusively in terms of their formal elements and by formal standards. Such criticism may be coupled with an exposition of the iconography of the works, but its value judgments are founded on the handling of the means of painting.

Yet the statement of formal intentions by an artist and the same theory in the hands of a critic move toward widely separated results. The purist objectives of Malevich, or of Mondrian or Albers, have brough into being paintings that vibrate with vigor and sensibility, in a word, with emotional and psychic content. In his act of painting the artist lives inside his idea, and the more he has narrowed it to exclude all but visual essentials the greater the psychic pressure to which it subjects him. This subjective pressure is not, however, comprehended in his formalist scheme. The thinking the artist aims at giving him direction and assurance rather than producing a correct analysis of everything that goes into his work. The artist's ideas are also polemical: he wants the art of painting to have a certain character, and he need not be aware to what extent this partisan wish has become the ruling passion of his work.

The critic, however, who allows himself to be circumscribed by theoretical statements of painters runs the risk of missing the totality of experience embodied in the paintings. The point is underscored by the inadequacy of formalist criticism in dealing with formalist art, i.e. precisely with the art with whose principles it is in full accord. Taking literally the notion that art aims solely at art, the critic participates in the painter's idea -- but the misses the qualities brought into being by the act of painting. These qualities arise not from the theory that instigated the painting and determined its mode but from the positive or negative drive of the artist in regard to himself and to the historical moment in which he functions, including the art by which he is confronted. The neo-Plasticism of Mondrian reacting to Cubism and World War I produces a result quite different from that of a hard-edge painter of the sixties reacting to Abstract Expressionism and the a-political art world of New York. Granted that the formal painter paints neither for love of God or from fear of the Devil; that he paints for the sake of painting, perhaps in order to carry art to its next step; that for him art is the absolute and that he lives only in order to serve it; that he takes orders from it (not from Nature or his own feelings) as to how he shall serve it and what he shall bring to its altar; that painting has for him a life, a mind and a will of its own; that the chief impulse of this living independent entity is to purge itself of anything not itself and to reduce itself more and more to its own essence -- granted all these motives and beliefs, the painter will not succeed in making himself into nothing but a painter, nor his painting into a crystal of immanent relations among the elements of art. As a painter he is *in* the painting -- let us say, he is its flaw. Purist painting is work within a human value system, most often the system of the ascetic. It is from the will to order, to purging, to (one adds automatically) salvation that it derives its passion for neatness, for hygiene, for shapes like the square and the rectangle, presumably immune to emotional associations, and its practice of banning tones and restricting itself to hues cleansed of atmosphere. In the end painting for the purist is God (without a beard). At its most intense, pure painting is religious painting. As such it is as "expressionistic" as the most agitated figurative art. When art in this mode is not caught in a religious trance it is mere interior decoration. And what measures whether it is one or the other is the desperation, self-denial and transcendence communicated by the tensions of its vacant shapes and fields of color. Recently, I received a message from Albers by way of a student from California. "Tell Rosenberg" it said, "that *angst* is dead." What message could be more anxious? The best of Albers' cool paintings literally quiver with psychic tensions.

Charge #5:

What definition of style (or definitions of style) provides the most useful structure for art critical study? On what bases may be established the limits or extent of a style?

The concept of style must be related to the function assumed by certain modes of handling within the experience of the individual artist and within the history of art. Visual similarities are not sufficient to define the feature of a style or its limit - that is to say, the eye is not sufficient. The emotional and intellectual ends to which the visual means are put are intrinsic to the definition. For example, the stylistic similarities between a Mondrian and a Newman are obvious. But the neo-Plastic style has with the latter assumed a new function, resulting in a deflection from neo-Plasticism and in moods and purposes in opposition to it. Out of the new use of the style come new stylistic possibilities, and these tend to develop in directions visually unrelated to the original mode in the example just given, "pure" abstraction develops into an aspect of Abstract Expressionism. The shifting and transformation of modern styles center on the fact that style in our time originates in ideologies and is cultivated by theory -- thus it is constantly affected by changes of meaning and may even undergo a total erosion of meaning. As de Kooning put it several years ago at a panel discussion of artists: "We are all working on the basis of ideas in which we no longer believe."

This brings me to an additional proposition concerning art in our time that ought to be added to the seven with which this paper began. From this proposition No. 8, I shall draw a few concluding remarks about criticism.

Proposition 8: That the ubiquitous presence of the visual mass media, from advertising posters to industrial design, has introduced into painting and sculpture a new factor which art criticism must reckon with - and that to do so, the critic must clarify his position toward contemporary society as a basis for evaluating its substitute products.

Art in the twentieth century, *including the art that has come to us from the past*, is affected by the mass media both directly (e.g., the use of the *Mona Lisa* in an advertisement) and through their impact upon modern culture generally. Especially in the United States, creation in art is accompanied at every step by the gigantic shadow of the commercial art output which mimics and adapts every new style in painting and sculpture, extending it into a totally different context of meaning, feeling and purpose. Thus Pollock inspires the design of dress fabrics, Calder a beer advertisement.

The utilization of art for the objectives of the market causes styles to become widely familiar but without being grasped. Popular museum programs contribute to the same end. The exhibition of the Mona Lisa under the auspices of public relations is intellectually equivalent to its reproduction in an ad. The result is that art in America, both new and old, is subjected to a constant process of alienation. The vast pool of skills directed toward specific economic, political and educational ends challenges art to define its own function and to differentiate its products, if any real difference exists, from those whose efficiency is measurable. A mystification of values causes all novelties to seem of equal significance and breeds the widespread belief that the ultimate function of the fine arts is to contribute visual devices to utilitarian design -- e.g., the justification of Mondrian by linoleum patterns or by Park Avenue skyscrapers. Raised in this belief, young artists have been bringing painting and sculpture steadily closer to utilitarian ideals. The shift in art training from Bohemian studios to university art departments threatens to accelerate and deepen the trend toward the kind of art whose uses are foreseeable.

What but criticism can tell us what we are doing and if it is what we want to do? What but criticism can indicate other ends, explain what makes those other ends attractive and indicate what must be done to serve them?

EXCERPTS FROM THE DISCUSSION WITH MR. ROSENBERG

Audience: To start the ball rolling, Mr. Rosenberg, regarding this last observation about the shift in art training to university art departments (for which we are accomplices), what makes you think that the results from the universities will be any more predictable?

Mr. Rosenberg: I don't think that they have to be, but I would think that from the whole organizational structure which is involved in any kind of large enterprise, there is a trend towards foreseeable results. Now I can see from this meeting that there are strong forces opposed to this trend, but I believe that you all recognize that there is that danger. I would interpret some of the discussions this morning, distinguishing between qualitative and theoretical modes of thinking, to be an attempt to push back that advancing wall. I think there certainly has been a fight against formulas, unless I misunderstand the previous speakers. I certainly don't feel that this is inevitable but I do think that it is one reason why the whole university structure should be, if possible, kept in a different spirit. Of course, there are these same problems in other fields. One reason I do give is my experience with teaching literature which I think has become a disaster. Now the artists haven't been there as long, and art departments tend not to be as large or as heavily endowed. It is a question that I think should be raised -- whether as you get bigger, stronger, and richer you will be able to continue to be as free as you are even now.

Audience: Would you comment on the commercial galleries, the carefully laid public relations plans by which artists are launched, and the pressures that these create for the artist himself?

Mr. Rosenberg: I could just charge through the New York scandals of the last five years, but you don't want that. The prosperity of art in the last few years has had some very good and stimulating effects, but there is no doubt that in the art centers, and radiating out from the, are many new interests. That's what you are talking about -- commerical interests, exhibition interests. I would also add bureaucratic interests which have put a terrific pressure on the artists. Let me give you one example. If you have this enormously accelerated displacement of styles which we have had in the last five years. Much more than just Op Art and Pop Art. Those are two that managed to remain afloat for three years; but there are several that came up for six months and then sank out of sight, and then another came up and sank out of sight. The artist who has been working in a certain mode but has not succeeded in reaching the front of the stage begins to feel as though he has simply been passed by history. I mean he feels he is in a rubbish heap of history. I know many artists who simply think that this is an impossible situation so they switch their style to accommodate themselves to a new thing. Keep that up for a while and the whole concept of art is put into question in regard to those people. I mean you have a disintegration of the whole art impulse.

Audience: I want to raise a very serious objection to you about universities. What you have said about university art schools can well be said about any kind of art school. They all make attempts to predetermine what you have described as being unpredetermineable. The real function of this conference is one of contributing to open a dialogue that we need; for example, between Joshua Taylor and art educators like ourselves. We haven't been able to talk. We haven't previously been successful in talking with each other. We have been talking past each other. The charge that you level against university art departments can be leveled against any kind of school.

Mr. Rosenberg: I agree with you. If you take the old art school that is exactly the sort of thing that you now have to avoid on a huge scale. In other words, we have a situation where people have gone to the academy,or even to a more liberated school, feeling that they wasted an enormous amount of their time and that they were misled into totally different directions. What you said is perfectly true. It is not a charge leveled against the universities. It is a question about the art school in general.

Audience: I would like to ask a theoretical question here about your paper compared to the previous paper. The question has to do with the methods and techniques of the historian as well as those of the critic. We do have a general position of the historian, but we must wait for history to tell us what happened. But a contemporary person cannot really know what is happening. Thus, for example, a hundred years after the Civil War we are getting a realization of what took place then which a journalist, writing in a daily journal, didn't really know. In respect to art, would you agree with a proposition that we must wait for history to tell us what are really is today? In other words, what really was art and what was not art? Now where as a critic do you stand in the face of that proposition which seems to be somewhat fundamental to the historian?

Mr. Rosenberg: I wouldn't dream of speaking for art history, particularly after listening to the refined distinctions Professor Taylor made among all the different kinds of error to which historians are prone. My own feeling (and if somebody refutes this, I guess they will be right) is that art is probably to the largest measure the work of artists -- not of historians, and not of critics. The best example is what the artists of the early twentieth century did with primitive art, but it could have been around in a different context. That is, there are many archeologists and historians of primitive art who don't care about quality. Professor Taylor said it involved cataloging it. But an artist comes along and begins to copy it. At that moment, he begins to adapt it; he begins to do something with it. At that moment, it becomes a part of everybody's taste. I have no hesitation in saying that the reason so many people are interested in primitive sculpture is because of Cubism and Expressionism. The guy who has really done the job here is the artist. As I have said before, all the critic can do is extend that experience into a realm of words.

Audience: Would you elaborate on the statement "granted that a formal painter paints for neither the love of God or fear of the Devil but he paints for the sake of painting"?

Mr. Rosenberg: I skipped a piece of that just for the sake of brevity and because the sentence was too long to handle orally, anyway. The point I am making is that the artist thinks -- he doesn't have to think about it. That's what the critic has to think. In other words, it is prefectly okay for a painter to give this argument. What I am saying is the art critic shouldn't take that argument as gospel. He ought to see if there is a fear of the Devil in that painting or not and not simply say, "well, now we know exactly what this type of pure painting is, because the artist himself said so". Now, you know that goes on constantly in catalogues of shows. The critic has a function of finding out whether it is true or not. He can't simply use the artist's words as a kind of gilt-edge security.

THE CREATION OF ART AND THE CREATION OF ART EDUCATION

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For more than two millenia it has been supposed that if all the components of artistic creation could be isolated, studied, practiced and reassembled, human beings would be in a better position to appreciate, teach and make art than they have ever been in. It is a compelling notion. If it has been useful at all, it has been only relatively so in those past times when a traditional culture prevailed, when common styles and techniques made it possible to agree on the nature of the artistic goal at hand. In recent Western history, however, this has become scarcely less than batting one's head against the wall for the apparently perverse pleasure of occasionally stopping to catch one's breath. Let us hope that this is one of those pauses.

The last serious attempt at formulation of artistic rules came about as a result of the Napoleonic regime's need for quick norms of both an institutional and an aesthetic kind. The Academy, under the direction of Jacques Louis David, advanced Neo-Classicism as an antidote to the Royalist rococo, genre and pre-romantic styles inherited from before the revolution. And a few years later, Ingres, talented as he was, fought blindly to maintain it as THE standard against the supposed subversions of Delacroix and others of similar persuasion. He became a villain in spite of himself, (althought there are some today who would make him into a martyr). Since then, such attempts to analyze and regulate art invariably have led to academicism.

Moreover, the continuing waves of modernist innovation have been dedicated to the belief that creativity cannot be taken apart because the nature of art cannot be fixed -- a common-sense judgment that can be easily separated from the mystique of holiness that also accompanies this period. We might reflect upon this: most of us are pleased to declare our sympathy with the contemporary arts, but by wishing to systematically investigate creativity for the sake of establishing controls for teaching purposes, we may be unconsciously searching for another, merely updated, academic rulebook. We teachers are natural academicians, for teaching is much easier with such a backing. This teacher, however, is going to propose a much harder way: the way of ignorance and uncertainty. It is a way without rules and without lesson plans. Its only platform is scratch, and its only discipline is trial and error. But to justify this approach to the very pressing educational problem in this country, it is necessary to see why the conventional path to the problem is inadequate, why, in fact, we may be left with no other choice.

Three main questions have been posed by this seminar, concerning the artist's decision-making process as he works, his creative growth, and his relation to the cultural past. (A fourth, asking whether there are not other questions will be considered later.) I think it is important to try to answer these because it will help to understand why they are hopeless queries with no future, and it will lead into what may be more fruitful ones.

The first wonders that are the factors which cause an artist to decide to take, or not to take, the steps he does in his work. We can only speculate here, but some of them may be the following: A) his particular itch, bugginess, obsession, neurosis or whatever name one wants to give it; B) his knowledge of existing alternatives of action, historical and contemporary; C) his continuing sense of discovery in what he does, or equally, his continuing sense of confirmation of suppositions and intimations he has had all along; D) his sensitivity to day-by-day opinion, voiced by colleagues, critics, public and family; E) his notion (sub specie aeternitatus) of his place, or non-place, in history; and F) his feeling of being someone special: a seer, prophet, elected victim of society, philosopher, moralist, priest, etc.

Now beginning with A), it should be obvious that the preoccupations of artists vary from man to man. One I know is obsessed with archaic philosophy and religion; another with pubic hair, another with anonymith, and another with the ritual of assembly-line living. It is possibly true that each of these is a symbolic form of more personal matters, but it is probably as true that once uncovered, their substrata would prove to be as different from each other as their outward appearance. In any case, whatever bugs an artist will usually determine what he will search out for the rest of his life. Artists are over and over astonished by this fact. When they are on a seemingly new teack, the day comes when they discover that it is the old one in a new guise. In addition, whatever bugs an artist will also tell him, usually consciously, what not to look for, and what to avoid. What not to do is as important to him as what he thinks he should do. The painter concerned with armchair world-systems would be distracted by researches into pornographic art, and might be confused by deliberate propagandistic ventures such as practiced by Ben Shahn or William Gropper.

It is doubtful if anyone but the artist himself can know when the bug itches; surely no teacher can know which are the good itches and which are bad. Nor can he provide enough different kinds of itches to go around to all of his students, for he should be busy scratching his own. But it is fairly certain that without such promptings from obscure sources inside and out, no art will be perceived much less produced.

There have been some investigators who have speculated on the universal itch. They have not found it -- unless we accept life and death as the answer, in which case every man is an artist. But if it were possible to list all the itches of history and weigh these against the itches of our time, in an effort to discover the best ones for the 1960's; and if they were programmed for art educational purposes, all the genuine artists would start to scratch in another place.

So far as a sense of alternatives goes (B), some artists, like Picasso, thrive on encyclopedia involvement with culture, while some, such as Mondrian, might feel that this sort of engagement is like ordering a meal from a Longchamps menu of six hundred entrees: out of desperation they select a cheeseburger and then return to their own cooking. Knowledge in both cases may be as great, but the Mondrian-type of artist may feel it important to deliberately narrow the range. Ultimately, decisions of value must be based on real choices amongst a number of paths of possible action, none of them clearly attractive. To make such decisions an artist must have an itch, for this alone makes choice an ethical activity. How wide or constricted the spectrum of possibilities is for each artist, is a problem to be decided by him only; it cannot be prescribed (though his success or failure at it may be judged by us in retrospect).

To give two examples: In 1912, Picasso's Analytical Cubism was reaching such a point of over-complexity that the precarious balance it struck between several modes of object-reference and abstraction, was in danger of being drowned in dense texture. The choices before him were: to return to Cubism's beginnings in Impressionism and Cezanne, return to a prior simplicity in his own past, give up Cubism for any half dozen other modern styles prevalent then, give up Cubism for an art of pure texture (this in itself justified by its origins in Delacroix and Monet), give up art entirely or find some solution within what he was doing. Deciding upon this last one. he had three more alternatives: simplify Cubism's fragmentary signs for objects, which at that time would have had the effect of reconstituting the whole still-life or portrait and rendering the picture conventional; simplify the emerging vocabularly of pure marks, whereupon he would have had to sacrifice most of the signs for objects also there; or simplify the syntactic relations between marks and shapes of given classes such as rounds, squares and wave forms. He chose the latter, here as well, and it was lucky he did because by this move he was automatically able to further transform the recognizable objects embraced by these forms while making them simultaneously easier to see but harder to comprehend in a traditional sense.

For the second example we may consider the problems faced by a man predisposed to working in the Hard Edge style today. He cannot help being aware of its thematic and technical relations not only to Pop, Op, and OB Art, but indirectly, through its frequent large scale and immediacy, to Action Painting, Matisse's late cut-outs, the development of geometrical abstraction in the 'twenties, as well as to the whole history of idealist aesthetics in the West since Plato. This network of allusions binds him inescapably to culture and forces upon him subtle but pressing paradoxes of attraction and repulsion to much outside of his particular work at hand. How he uses these connections, and in what combination he puts them, will probably contribute to the judgment by posterity of his quality. But now, this year, his assessment of the situation must be an unanalyzable blend of factual knowledge and intuition -- acted on in much the same way as a general planning a military campaign. Applying this lesson to teaching art should lead to thoughts about the value of training in making choices among numbers of attractive alternatives. But the selection of these alternatives by the teacher is the critical issue. How does he know which to select? And even if he is lucky in this respect, once they are fixed into curricula, all may be lost.

As to the matter of an artist's ability to constantly discover the old world anew (C), if he is incapable of this sort of wide-eyedness and curiosity at heart, he is finished, and hopefully goes on to something else. But this state of being, like the artist's itch, is unteachable; and, moreover, is clearly no different from what is necessary for a business man or scientist to keep going. If it is supposed that the artist needs it to a greater degree, there exists no standard by which one would measure, no more than if there were a standard could anyone apply it. The whole question of "inspiration" is hopelessly personal, and despite our assumption that it really exists to serve men in their hour of need, any attempt to systemize it runs the risk of becoming mere prejudice in the hands of well-meaning tyrants and moralists.

The artist's responses to outside opinion (D) are also quite sensitive; even highly cultivated. He eagerly reads the signs of approval and disapproval around him, and in spite of frequently feigned indifference, he instantly recognizes intelligent judgment compared with that made by idiots; and he is deeply disturbed when those he respects reject him and those he disdains applaud. Sometimes he is better off when no one applauds, for at least then he supports his precarious self-esteem with the silent but powerful tradition of artistic self-sacrifice. Sometimes he fares better when everyone applauds. Unfortunately, it is hard to know how many whiplashes or how many pats on the back a man needs, and much harder to know who should administer them. I have seen over again entire styles given up, or marginal interests suddenly bloom into major preoccupations, due to causes that can be in great part attributable to outside opinion of an artist's work.

Assuming that a teacher stands for all the facets of this opinion to the student he teaches, not only must he be a shrewd judge of what are the real issues in the art world at a moment (a big order for anyone), but he must possess a sense of timing that will tell him exactly when to hurt, and when to heal, a young artist's feelings. There is after all, a rationale for both sadistic teaching and loving teaching, and these are supported by the tempermental differences people are born with, as much as by the peculiar cultural biases of an era. Some artists thrive by responding to the varied opinions of others, and to the changing appetites of fashion, while some find this, especially today, quite debilitating. The gregarious, or restless, artist will subtly sponge up all viewpoints in the interest of "range," and the loner will turn his back on them, using the defense of "single-mindedness" and saying that "success kills." They are both right, and their prototypes in the elementary schools are right also. A teacher is a saint if he can cope with such problems; and he is a sinner if he doesn't.

And the more he tries to do so, the more he will fail. Intuition does not respond to forcing or theory.

It follows that a place in the historical sun (E) will mean a great deal to an artist, although in different ways. The twentieth century is history-conscious and artists cannot escape this fascination even when they want to. A few of them, in reaction to such excessive preoccupation with destiny, work at remaining anonymous, at eliminating themselves as unique personalities. But because this denial of self-importance must be conducted within the world of culture if its lesson is not to be lost, the artists become better and better known for trying to become unknown -- like Marcel Duchamp. Most, however, will try to fix their position in the archives very early in the game: if the pioneers of modern art have publicly denied history, they are known privately to have altered the dates on their canvas stretchers in order to insure priority when the chronicles were written. Today it is common to find artists not only printing carefully-compiled curricula vitae for frequent distribution; it is also not the rarest of events to find their contents revised year by year, if not in the spirit of truth, doubtlessly in the spirit of self-advancement.

But the President of the United States and Henry Ford, Albert Einstein and Babe Ruth, also have had thoughts about history's provision for them. Like public opinion, concern for the judgment of all time may profoundly influence the course of work. Those who seek the public eye also seek the infinite gaze of eternity. The question, usually unstated, is: "Will history be on my side?" Socialist art theory is not more aware of historical "role" than purist aesthetics, which asserts that the inevitable direction of painting is towards abstraction; both are deterministic. School children in art class catch on to this very quickly. Their works are pinned up to the wall, sold at PTA bazaars and art galleries, increasingly discussed by the teacher reproduced in national and professional magazines, and paid tribute to by the professional artists themselves. As their schooling progresses, it is a simple step from thoughts about their place in the classroom to their place in the pantheon. There is nothing demonstrably wrong with this: some can take it and some can't. The best efforts of the former are often sparked by intimations of immortality while the latter find the challenge murderous and distracting.

The problem remains how to utilize such facts. If the teacher is a mouse, he will act one way; if he is a lion he will act in another. Children of the opposite temperament from him may find themselves at the very most encouraged. Lesson plans and pedagogy will not help, for such motivations as we are speaking of are the sort of dynamite one dares not treat casually. Only men and women of exceptional wisdom and insight may face them, but how are we going to find ten thousand of these to staff our schools? Shall our graduate schools turn their energies to the mass production of geniuses?

In itself, the idea of genius (F), of the man of quality, is an imponderable. Its importance in most major cultures, particularly in the West, makes it presence as a force inescapable. All artists harbor feelings of being unusual in a positive (as much as negative) sense: they are keepers of man's spirit, searchers after truth. A mixture of the shaman and the philosopher pervades their inner core, and even if it is exaggerated as a self-defense against public indifference, it does play as strong a part in their decision-making as their sense of destiny. It given them permission to be curious about unknowns, to do things not generally approved, and also promoted the psychological strength to keep going when their work is flagging.

The crucial factor here is that the idea which artists have about their ultimate role is supported by the idea conveyed by most lecturers and writers on art, namely that art contains some kind of special wisdom. Whether it is true or not that art is the exclusive source of this intelligence, the fact is that we look for it there. If art education does not even touch on this matter, it is perhaps because the few in charge who are aware of it, know how elusive it is. Paradoxically, the more art is made available in the United States, the more it becomes unapproachable because we seem not to be able to agree on what it is. Teachers cannot assume that by not mentioning the "ineffable" it will take care of itself. It doesn't, paradoxically.

The second question raised by this seminar, about how an artist "matures," is difficult to answer. It is never clear what we mean by "maturation." Sometimes the "mellowing of rash youth" is meant; sometimes we delight in the man of increasing years who keeps up with the young revolutionaries. In general we mean to say that as an artist matures, he gets better. But obviously this is subject to all kinds of interpretations, and few of us bother to say what our standard is before we start talking about a particular artist's rise or fall.

In any case, whatever we want "maturity" to mean, the consensus at this particular time (a consensus that will likely change and keep on changing) at least agrees that artists tend to peak at different ages: Rimbaud at nineteen years, Yeats at fifty, Braque at thirty-two.... Many, like Vlaminck, peter out after three or four years of intense productivity; some, like Rothko maintain an even keel. Others, such as Mondrian, gradually improve with age, "as a fine wine ripens" we are tempted to say in old-world lingo. But still others go up, down and up again, like Matisse or Beethoven. The idea used here is a vague sort of cultural Darwinism: one goes, or should go, onward and upward in quality. But the history of art reveals no such evolution, nor does the history of individual artists. It is nice to want art to contain a built-in-improvement principle but we ought to be suspicious of it. When it has been used against all evidence to the contrary, as if there were a disease or failure-syndrome to be cured, it has produced platitudes at best and hidebound rules at worst.

Why artists get "better" or "worse" or "stay the same" is partly a problem of accounting for changes in professional and public taste: Gainsborough was high on the list in 1910; now he is low. It is also a matter of tackling the enormous job of assessing both the "salient" values of an era, with the "salient" features of an artist's biography. The detailed account of Van Gogh's life reveals a set of possible causes for his art involving family, social and professional entanglements, intellectual aspirations, and religious yearnings -- all of these quite distinct in character from the more meager record of the life of Jacques Louis David. But these are only "possible" factors. What of those we have no information on? It is not inconceivable that if we came up with a police document proving Van Gogh to have been a youthful murderer, his steadily psychoanalyzed paintings would take on a new meaning. And our notion of his "maturity" would change. However, most "salient" biographical information is almost impossible to obtain, and even amongst contemporaries, probings into the privacy of an artist's life is not likely to be met with cooperation. Yet if any sense is to be made of how an artist "grows," in order to determine if indeed he has grown, then such data is essential. Add to this the necessity of knowing the biography of a period, especially the period under our noses, and the whole business of analyzing and controlling "maturity" becomes futile.

The third and last question, regarding the connection that exists, or should exist, between the artist and the art traditions, is simple and complicated. The simple side of it is this: it is no longer a real issue to ask whether the artist should be "cultured." He usually is today (although I am not referring to refinements of taste, to aristocratic manners, or to specialized knowledge of the so-called classics, which have often enough been confused with culture). I am suggesting that because of his college education, and the continuous dissemination of information by the mass media, the average artist cannot avoid a broad familiarity with the developments of his field and related fields. Obviously, as pointed out in question one, this is what makes the artist so history-conscious and anxious to compare himself with the past. The difficulty, again lies in how the artist makes use of this culture. His personal sense of choice is involved, as well as the pressure of opinion around him. Insight into the consequences or implications of his (or anyone's) work is very clearly going to be bound up with his judgment of its meaning within the total picture of culture, and therefore with his judgment of its value.

Hence we can see how purposive the recurrent waves of anti-art have been in the last half-century. Their militancy has been invariably proportional to the amount of culture possessed by their proponents, and the stance was taken for the sake of liberations from habit rather than from art as such. In this light, a disavowal of the traditions is actually a form of deep respect (as is the rejection of a father by a son), and may rise to real innovation. But the uses and disuses of the past by artists are always hard to evaluate until later on. With this problem as with the others in the foregoing, testing and programming are next to impossible. The right path is always after the fact, and by that time new paths are being trodden nearby to death. Educational theory cannot hope to keep in step with what we are actually doing and with what we care most about if it continues to pursue the chimera of analysis and generalization. The greatest present value of analysis and generalization, the value I am trying to point out here in using the method myself, is that it is conclusively self-defeating. I proposed in question one, that an artist's decision made during his work involve understanding of what not to do, as much as, and perhaps even more than, knowing what _to_ do. the same applies to art education.

We might begin to see that slicing up art and artists is pointless, especially for us living in 1965. We know too little to go about it. In another sense, we know too much (and this sense prevents us from improving ourselves in the first). I said the above that we have digested a great deal of art history. The efficient distribution of books, magazines, exhibitions and films, the growing popularity of art societies and art lectures all over America, the ease of foreign travel, have made much and, potentially, all of the entire culture of mankind available to us. The revolution in taste that this has caused, has eliminated in fifty years the last possibility of aesthetic parochialism, and with this, aesthetic certainty.

We can admire "Krazy Kat," a Japanese Zen master's caligraphy, a Mayan figurine of a priest dressed in the skin of his sacrifical victim, a Gaboon mask, a southwest Indian sand painting, a Brady Civil War photo, a Faberge jeweled Easter egg, a Quaker buggy, an Egyptian pyramid, old poster type-faces, a piece of driftwood, Ottonian manuscripts, Victorian machinery, the art of the insane, the scrawls of children, Assyrian reliefs, a factory smokestack, a giant earthmover, Times Square's lights and so on and on and on -- as easily as we can admire Rembrandt or the Parthenon. No one with any kind of intellectual honesty can say that one of these is better than another, for there is no criterion that can embrace all of them without reducing their differences to absurdity. All that he can do is profess personal faith in whatever he finally likes most. The number of motives which generated this range of art, and the great number of reasons why we respond to it as well as the quasi-art included, are (if we could list them) probably so diverse that merely contemplating the possibility renders our ability to use them as bases for future acts of art highly doubtful. One man's faith, after all, is another man's arbitrariness.

In the West alone, content or expressive focus in art has been so varied and so dependent on the social and political circumstances of the respective periods, that artists and connoiseurs might realistically wonder how to apply all this to the present. Except in the most allusive or symbolic ways, it seems impossible. Effortlessly, a slow-motion film of inedibles unrolls: THE IDEA FIXES OF THE AGES! Romanesque art preoccupied with the punishments of hell! Gothic art with heavenly salvation! French Rococo with fantasies of innocent dalliance! Neo Classicism with middle class duty! Romanticism with heroism and escape! Realism with reportorial detachment! Impressionism with ephemeral Springtime! Dada with absurdity! Surrealism with the opiate unconscious! Action Painting with existential crisis! If, as we have painfully learned from the lesson of Western history, attempts at archaism always end in spiritual impotence and artistic failure, we still cannot explain what to do about our attractions to the past. How can our taste for Medieval art, Benin bronzes, Italian mannerism, or Art Nouveau, be translated into contemporary idioms?

We may learn another point from Picasso, in this respect. In his so-called Negro phase he was struck by the (to Western eyes) barbarous effect of African sculpture, yet realized that he had not only an expressive goal in mind which these strange works might benefit, but he also had a purely Western concern for constructional processes. He therefore insightfully avoided the symmetry of the Gaboon and Dahomey figures he liked, and substituted his own taste for asymmetry. He must surely have realized how absolutely essential such symmetry was to the unmoving terror of the African pieces. But he also knew he was not an African, and could not be one if he wanted; thus by deliberately "misunderstanding" his inspirations and utilizing only a part of them, he was able to satisfy both of his goals by turning the African sculptures rough and intense geometry into his pro-to-Cubistic style. Shortly thereafter he gave up the remaining superficial earmarks of masks and ancestor images.

One may try to get around this in another way by recourse to "collective characteristics." Inasmuch as the "itches" of many artists contemporary with each other will overlap and combine to make "periods," and periods will join to make cultures, the idea of utilizing "traditions" suggests itself. As syntheses of geo-cultural characters, world-views, individual deviations and pure habit, these traditions -- like the Far Eastern tradition or the Western European tradition -- supposedly can be absorbed on an intuitive level by artists without any reference to styles per se. Yet it is a question whether such abstractionizing isn't just wishful thinking: can we really separate a tradition from its embodiment in particular works of art, made by particular artists at a particular time? That is, can we derive a *principle*, let us say a baroque principle, *which is entirely different from all historical works called baroque*? I doubt this very much, for one yet has told us how and all the evidence points to its unlikeliness. In fact, it seems that in spite of our "tradition" of individualism, we also have a "tradition" of traditionalism.

The traditions of art tend to move us by relatively small groups of events rather than by such macrocosmic affairs as may describe the difference between East and West. If we must deal today with traditions rather than THE tradition, they are still tangible collections of human products. But we face again the same problem of selection as we did in trying to account for our appetite for many kinds of aesthetic objects. Whose winner is the best winner? If anyone proposes the Italian Renaissance, I can propose the French Romanesque; if he bets on French Impressionism, I can put my money on the T'ang Dynasty's *I P'ing* or "untrammeled" style, in which the painter uses his own head as a paint brush or drags a friend covered with ink over his paper; if he says he likes Action Painting, I can say I like riding horses in a Happening because there is even more action in this. You pays your money and you takes your pick. With such knowledge of the variousness of our standards, who can confidently set down the problems and the curricula for an education in art?

There is one recent theory which claims to have solved once and for all the problem of finding a unifying ingredient of all the different kinds of art that exist or may exist in the future. This is the formalist theory. The contention is that art is the practice of a special procedure called "composition." It is not simply *what* art depicts; it is *how* something is depicted that counts. Whatever else a painting or sculpture may convey, its first and final obligation is to satisfy the most exacting standards of form. The idea paralleled the emergence of abstract art, which for a while seemed to prove that form is both means and end, "how" and "what," simultaneously. Form-mindedness, in turn, helped to reinterpret the figurative art of the past and present for modernist requirements. Armed with this Rosetta Stone at last everything could be explained and a program in art education could be put into operation.

Form became the theology of the purist, from which he deduced his method of worship, and the appearance of his sacraments. The purist saw form as an a priori, closed system of relationships existing between discrete, colored shapes, spots or atmospheric areas, distinct from their possible identification as can-openers, Ginko trees or mud-puddles. A well-formed picture is like a finely-tooled machine: everything "works." The artist's biography, the cares of society, the influences of art history, the fact that the blue in the painting goes with the blue of a nearby couch, are all irrelevant considerations. Form is contained *within* the work. The artist's sole job is to bring this about, as though he were a mere catalyst, an intermediary between the apparently real and the truly real. Once done, he cuts the umbilical cord.

Thus defined, the whole is made up of coherent parts, whose division into large groupings may be of two kinds: symmetry and asymmetry. From the latter are derived the sub-categories of over-all distribution, circularity, iteration, and juxtaposition. Amongst these, coherence is achieved by harmonic composition, which joins strongly contrasted elements through transitions; by enharmonic composition, which joins strongly contrasted elements by relating one or more of their qualities (the red of strawberry jam and of a fire engine, for instance); and by non-harmonic composition, which reverses the process and begins with basically similar material, and then makes (relatively small) contrasts or variations of it to sustain interest. The artist's training consists in practicing these arrangements, and the test of his talent is to reveal through such practice the music of the spheres.

The trouble with this theory of art, and its derivative, "significant form," has been tentatively remarked by DeWitt Parker and Morris Weitz: it is that it cannot be proven to be characteristic of art and art alone. The purist's compositional types can be found in shrubbery, clouds, beehives, molecules, universes, and any square inch of sidewalk. They can be found as well in poor art and good, and in fact in every human action. Moreover, no one has been able to say what particularly distinguishes their presence in good art from their incidental presence in everything else including the kitchen sink. Indeed, it may never be possible to differentiate them since the structure of the brain makes it unlikely that any other forms can be thought of, much less perceived. If, then, these formal categories are nothing but truisms of nature as a whole, their preeminence as aesthetic criteria is a delusion.

All the niceties of the virtuoso formalist -- that specialist at architectonics, at manipulations and embroideries of the rhymes and variations of shape themes, that magician at making us feel an order has been crystalized into being by an act of genius -- can be found in anyone's backyard. Given an agile eye, and a mind tuned to games of complex interrelation, suddenly the children's toys, the forsythia bushes, the cedarpost fence, the just-visible aerial of a passing car, the blades of uncut grass, a bluejay on a branch ... are guaranteed to fall into a scheme that will stand up to any painting. I personally derive as much pleasure from a printing press as I do from Poussin's "Rape of the Sabine Women." Compositionally, they are both elegant. Compositionally, just about anything I take the time to look at, is elegant. Form, and therefore art, it may turn out, lies not only in the mind of the beholder; it is lying around all over, free for the asking. And lying around that way, it hardly will serve as the basis for comprehending the art of all time, or for making an art of our time.

It begins to appear that we know just enough to see that we have a very unreliable notion of art in general, and of standards of art in particular. The fact is that we can neither define art verbally, nor can we point to a body of activity and objects which we would indicate by gestures of some sort, so that these could be depended on for all future acts of art. From what we understand of everything called art up to this minute, there are so many alternatives, motives and contradictions of value -- even in our own time -- that any stand taken risks being deliberately parochial or totally experimental. Therefore, if we cannot say, and only barely sense, what art is, then we must admit we are just as foggy about what an artist is, what he does, how, why, and for whom he does whatever it is he does. It seems to me that an attitude of childlike curiosity and intellectual uncertainty would be our proper course rather than a dependence on the analytical investigative procedures we now are engaged in.

The assumption that art, artists, motives, and publics can be atomized presupposes that such objects, people, and conditions are stable, and will sit still during and after one operates. As I have tried to show, they are engaged in a very unruly business of transformation: Greek art for us is not what it was for the ancients and our view of it changes almost every few years. Things, people and their needs sit still only when our mind substitutes for them a stable concept. We then analyze the thought instead of the reality, and the thought is what we want art to be, not what it sometimes is or what it may be tomorrow. Perhaps this is the nature of understanding, and perhaps action is impossible otherwise; but our concept of art and art education has not panned out and so we ought to look for a different one.

Educationists naturally have to have art educable; which requires a great deal of systemization; most artists, including those who teach too, have more ambivalent feelings toward the matter. They want to preserve the mystery or magic of their pursuits, recognizing that whatever this may mean, it is extremely valuable. They also want to reveal this in full-strength to a responsive audience. Systemization so far, has invariably killed magic, and has broadcast false or dull values and senseless activities, in the opinion of all artists as well as many educators sensitive to what has happened in the schools. The problem of art education may be an eternal dilemma, in the sense that we cannot have a packaged, full-strength mystery for thousands of teachers in charge of millions of children. But must we think in terms of neat packages? If we are going to fail for the most part, can we not fail more interestingly, that is with a little color? We might even succeed a little here and there....

To find out whether this is so may be our only possibility. Instead of extrapolating criteria from what artists seem to do in so-called professional situations, for application to school situations, it might be a good idea to see what happens when an artist interested in school children tries to convey his magic in the classroom. It might be that we are really asking about a truly theatrical atmosphere. It might be that our curiosity should take us to the remnants of side-shows, circuses, parades, magician shows, to whatever captures kids' attention on television and the movies. It might be that in paying too much attention to what we want art to be and do for society, we have made of it an enormous "lesson plan" full of bad acts. This, in answer to the seminar's fourth question, is a far more fruitful area in which to be curious.

I should like to propose experimenting in this direction, with no holds barred and loaded with dangers. Artists will play the principal roles in the experiment, although it is hoped that children will soon take over in the degree of their participation. At the same time, professional observers from related intellectual disciplines, and the public in certain communities, will take on subordinate parts. Eventually, we may learn more about art this way and more about art education; or we may learn absolutely nothing. The chance is worth taking, for lacking any other radical alternatives, we may have to settle for more refined and sophisticated versions of what we have had all along. And that, I would judge, is beyond improvement.

But first, a summary of what makes up the educational scene today is necessary. It may not be the scene that the brighter educationists would like to think it is; however, I believe it fairly well describes what is going on wherever art and art education are taught.

From the professional artist's viewpoint, especially from the viewpoint of those who are also teachers, art education in the primary and secondary schools suffers from one simple defect: no contact with art. Such training as exists in this country, whether in appreciation or creative work, is woefully ignorant of real works of art, and of what is now (as well as what has been) involved in the making of art. Remote from the art which artists and connoisseurs know, the "aesthetic world" of the lower schools is a vague compound of notions of social adaptability and group therapy, with a filing cabinet of unconnected techniques, both gleaned from early twentieth century thought and art. But worse than that, in their present form, these ideas and techniques appear in methods textbooks which are many times removed from their origins. Instead of benefiting from a healthy intellectual evolution, art teachers are confronted with little more than good intentions and senseless course plans.

Art-educational theory today consists of two main branches of overlapping study. One is based on individual and social psychology (as implied above) and the other on formal analysis of artistic activity and certain kinds of art works. The first appears sympathetically human and the second strikes people as inhumanly scientistic, as if it were a laboratory procedure.

The first sees a man as naturally expressive and gifted, a born artist, whose outlets are stifled by personal and social pressures. Young children, however, are still innocent and flexible enough to be saved with the help of kindness and the proper motivation. But, however warmly disposed, such judgments unfortunately lead to platitudes about the value of the fulfilled human being, his creative goal in life, a good family background and a clean classroom. In too many cases, such wishful thinking is simply a disguise for sentimental moralizing and a bland, utopian ethics with nest to no contact with reality, artistic or otherwise.

The second school of thought divides the artist and his work into little pieces and tries to develop each piece separately, according to the belief that all of the pieces will knit together at the end of a course. Students of this approach conceive of art as a progressive series of geometric and biomorphic diagrams filled with arrows telling the viewer how stimulus leads to conception, which leads to expression, which leads to communication, which leads to feedback from the communicant to the artist and so forth; and how the essentials of this interchange are shapes, lines, tones, colors and patterned relations, all leading to and from each other with more little arrows .... This theory is really a disguise for a preoccupation with analysis as an end in itself. Its recommended exercises are an embodiment of it, and children as well as teachers-in-training who are subjected to it, are not being exposed to any sense for art but are guinea pigs for an experiment in destruction.

Both of these approaches offend artists because to them art is neither so sentimentally moralistic, nor is it understood and made in such a fragmentary way. It is at once more spiritually demanding in function and more organically simple in conception. The sad fact is that educators seem unaware of this. The gap between real art and the nonsense conducted in the schools widens every year as more well-meaning theorists contribute to the very emptiness they are trained by.

Understandably, as mentioned above, the reason for this separation is that in an effort to provide for mass education, teacher-planning has substituted broad generalizations of assumed human importance for an activity that is frighteningly individual and/or highly specialized. "Everyone Is An Artist," "You Can Paint," "Express Yourself!," "Art Appreciation Made," are titles of popular books that reflect this attempt to reduce and "democratize" something that is not so much exclusive as it is far more mysterious.

It has been the obvious hope that if principles could be discovered in human behavior and in art situations, then teaching methods could be devised that could be applied by an college graduate from Peoria to Baton Rouge, and would thus serve millions of youngsters across the country. Unfortunately, we have seen that it has not worked out this way; for if it had, we would not be involved now in trying to correct a bad situation.

No one knows at this time what, if anything, will "work." But we can learn from what hasn't worked and avoid repeating a mistake. Since the non-artist's way has not worked, perhaps the artist's will. It is only a hunch. It may turn out to be inadequate; it may have to be modified as one goes along; it will most certainly arouse criticism; and there is the possibility that it will be a complete failure. One has to face the gamble and admit frankly to going ahead with an experimental attitude, some inner conviction and little else. In any case, the gamble will be worth taking because something can be learned that simply cannot be learned under present conditions.

The gamble is this: Let us consider one of the prevailing attitudes artists have about their work and their field in general, and try to learn a lesson from it. All artists know that whay they do is very much a matter of fantasy, of dreaming. They dream of adventures, love affairs, glory, hell (sometimes self-imposed), the music of the spheres, the light of absolution, intellectual triumphs, pure games, secret knowledge of the physical and metaphysical universe, murders, insanities -- and a thousand other preoccupations. Whatever their particular dream is, they are conjuring up a picture of a world they experience, or would like to experience (a world which, incidentally, may correspond to the dreams of others, but need not).

Verbalized this way, we are invoking just another aesthetic theory, the very respectable Art-as-Imagination theory; and as such, it is an interesting and as useless as any other ideas. But, in the artist's sense of Being, in his active participation in the life of imagination, he may, as an example to philosophers and particularly as a teacher to young children, exude the power of dreams so directly, that the theory ceases to be a THEORY (and a lesson-plan) and simply exists as a way to be alive. This, artists feel, is close to being a prelude to art, for all the philosophy and professionalism of the art discipline follow from it.

The value of imagination cannot be taught to teachers-in-training, much less conveyed by them, if they aren't imaginative in the first place. Artists who have imaginations know this and it is the one thing they share with the very young, before it is stifled out of the latter. What school children need is a Pied Piper, lots of Pied Pipers, not social workers and lab technicians. The Pied Piper had magic and this is what is important about his story. Like magicians, artists deal in a sort of magic, and it is proposed here that some of them can double as Pied Pipers and lead school children along roads they are pressured to avoid and soon forget. (It is the primary school that I am most concerned with, for genuine work with high school students can be done, I believe, only after they have been reached at an earlier age. High school students, in my experience, are already very cynical creatures.)

The objective is, therefore, to bring to the lower schools as many artists as possible, with no preconceived plan on our part of how they will conduct their classes. They themselves, may have plans, but each artist will be responsible for his or her own approach. Such classes should be instituted as pilot experiments spotted around the country, and in the beginning, at least, on a relatively modest scale. In order to avoid curriculum conflicts with existing educational systems, the classes should be adjuncts of the program of particular elementary schools. These schools should be approached first to find out if they are interested in cooperating with such an experiment, and if they are, their responsibility would at first be limited to providing no more than space and facilities, while the Federal Government would underwrite the expenses of salaries and supplies. The individual schools should hardly feel imposed upon, the pressures and influence of often recalcitrant school boards and district supervisors would be reduced to a minimum, and regular teachers at the school and in surrounding area could study the experiment and discuss it with the artist-teacher, as it goes along.

The staffing of this experiment would be derived from three sources: the large roster of American artists of acknowledged reputation, the even greater number of art major graduating from universities and professional schools, and a hard-to-estimate number of generally ignored but often gifted, men and women conducting community art classes, slum-reform recreations, and "Y" or church activities. (Obviously, although the public schools cannot be expected to provide the kind of talent needed, there may be exceptional teachers here and there, and these will be as helpful in the experiment as the predominantly "unofficial" person we are looking for.)

As for the first source, the well-known artists, the chances are that few will be willing or able to contribute their time to school children. Some, of course, will be helpful and we should certainly welcome their participation. But the majority of even these will probably be most useful in a consultative capacity or in a different, though related, plan to teach and advise in education colleges, so that our point of view can be simultaneously conveyed on more than one level.

In contrast to those with "big names" the hundreds of young artists graduating from colleges and art schools every year are an extremely important mine of potential vitality. They are at this moment of their lives full of zeal, while having little prospect of exhibitions, sales of work, or fame. As active as the art scene is today, and as quickly as it is becoming a part of the national consciousness, it cannot absorb the growing backlog of young artists, either critically or financially. At such a moment, many of them would welcome the experimental challenge, the rather unusual autonomy, the sense of a concrete goal, and the financial security, promised by our project. Relating to the Peace Corps. it would help to solve the problem, faced by every young artist, of what to do constructively with his life; and it would make positive use, for our purpose, of talent and energy which otherwise might wither in a few years from discouragement. This double advantage is significant, for both art and good teaching would be fostered. Young artists emerging from the universities and technical centers of this country do not like the idea of going into teaching in the public school: they remember and know what it is like. Our idea may change their minds.

The third source of Pied Pipers constitutes a sort of "pariah" of the teaching profession. It is made up of people who are lacking in the "right" background and so have no accreditation, who are sometimes colorfully individual and so would not easily function in a regimented or conventional atmosphere, who are still struggling without recognition in their own creative endeavors, -- but who, in the artist's opinion, are the best art teachers anywhere. Examples of such individuals are known to nearly everyone in the art world and a list of their names could be drawn up very easily. These men and women, who earn little money, work under conditions that are often sub-minimal, possess a dedication to their job which is just short of being a religious calling; and they inspire in the children a spirit of inventiveness and magic that is almost unbelievable. They are our greatest immediate proof of the validity of the proposed experiment. It is to them that we look for guidance in setting our plan in motion. They are the ones who really know what is at stake.

In sum, what we are proposing is an approach to art education which has in mind only an awareness of the basic mystery of art and a belief (supported by ample evidence) that artistic people are best suited for revealing this to youngsters. Not every artist is so able, of course, but those of us who teach and are deeply concerned with the place of art in the school life of American children, have no trouble in distinguishing the ones who are able. We can smell a magician at twenty yards, without looking at his credentials! The simplicity of this approach may well be its best recommendation. Eventually, all art teachers may be working artists.

Furthermore, our project's purposely limited scope and relatively modest requirements, should be inexpensive, and cause little risk to individuals, school officials or children. The possible rewards could far exceed the investment.

Finally, in order to see any results and judge their merits, the experiment must be undertaken with active support for at least ten years. Less time than that might either produce false hopes over momentary achievements, or no clear conclusions at all, because the stew is still cooking. We should guard against impatience and ten years seem a reasonable limit to hasty evaluations. During this time, however, it would be good to have a team of observers (rather than jurors) made up of interested educators, social scientists, artists, and perhaps even scientists and mathematicians periodically write illustrated reports for publication. These could be distributed to all those participating in the experiment, to the public schools and to the art departments of colleges of education. Everyone will be kep informed in this way, and it might prove indirectly beneficial in its persuasive effect upon ingrained educational attitudes. In any event, as was point out earlier, even negative results will be instructive.

The main hope for this proposal is that, if put into practice, it will act as a sort of Spring jousecleaning. Some good things may have to be thrown out along with the dead weight of over-intellectualized and generally lifeless classroom methods now taking up the space. But with a clean floor, most people feel the urge to furnish the room again and, at the very least, fresh energy rises to the occasion.

EXCERPTS FROM THE DISCUSSION WITH MR. KAPROW

Mr. Kaprow: I should like to add that currently I am attempting to put this proposal into practice and if any of you have any suggestions, I would like to know about them informally.

Audience: Mr. Kaprow, we are experimenting now with something similar to this, but we would like to know how you "smell" a magician because that has been our problem.

Mr. Kaprow: It has to do with a good show. That's my answer. Don't spell it. Don't worry.

Audience: I said "smell" it.

Mr. Kaprow: Oh, I thought you said "spell" it. Well, my answer still goes. It smells something like fire and brimstone. You get that awful odor. Believe me, it doesn't smell like ivory soap, and that's a smell that I know very well.

Audience: Do you intend to propose a similar experiment at the secondary school level on let's say the east side of New York or in Harlem in New York?

Mr. Kaprow: I would be afraid to. I don't know enough about this yet. As I said before, I think older kids are pretty tough, and their toughness consists largely in a kind of resistance to any changes in their thinking. So, perhaps after the first period of experimenting with young kids, it might seem feasible to build up the experiment with older children. I don't know this, but I would hesitate right now, simply because I am scared.

Audience: Suppose I don't know what criteria you are using?

Mr. Kaprow: Well, this really is the criterian because you are asking me for verbal distinction here, and I refuse to go any further than I have because I think it is now largely in the hands of offensive definitions. It's just simply how good a show can be put on. It boils down to theater.

Audience: What does that mean?

Mr. Kaprow: It means the kind of thing that attracts people's imaginations, it seems to me, speaking now as an artist rather than a word merchant. I don't know. I have seen and I have watched my own kids and I have watched a lot of kids and they seem very nicely to respond to the same oddnesses, strangenesses and theatric shows that I would say are the earmarks of the kind of thing we are talking about. It's like a painting. It's like music; anything else that we call or have called art. It has that kind of compelling attractiveness to it, and there "ain't no other way to define it". All I am asking for is a chance to find out whether I am wrong. I can't explain it.

Audience: What you just said includes the effects of tough and dirty shirts, making love to your girl friend, all formed into this scope of what you just said--bug show, you can feel it, you can smell it, it's got magic. So how do you know the difference or is it that "difference" doesn't matter?

Mr. Kaprow: It doesn't matter. I really don't know what art is. I really don't know, except I know what a certain number of examples of art are. I don't know what it "can be tomorrow", and I have to admit that my own conception of art allows anything under the sun, including the "rain of China", to creep in as a possibility.....Pop included. It's all kind of visionary, and at the same time very hard and sentimental. You know, like a blast in the face. This is the kind of thing I think we have to worry about "turning on" kids with that kind of hard stuff. It should have the same kind of potentiality with love or otherwise, the same kind of electrifying effect as a blood purge without actually bleeding people. In other words, I am ready for shaking magic sticks and wands and turning the house up-side-down if that's what's going to do it.

Audience: All of us here are interested in I assume upgrading and improving the teaching of art in the schools, public and private--but if you are really serious about your not understanding what art is, then how in the world are you going to conduct an experiment designed to improve a situation?

Mr. Kaprow: All because I have a couple of backyard magicians that I know. I propose that we turn them loose. Let's not worry about defining your criteria and your standards.

That's the trouble with the whole blasted business up till now. You are making doilies and this and that, and it comes out awful.

Audience: No one here is interested in turning out doilies.

Mr. Kaprow: We reach a point where all verbage is verbage. Let's have a good show. Let's forget the definitions; afterward if you want to play around and see what happens, that's okay with me. I'm saying forget the verbage. I don't know how many times I can say it without your really thinking I'm lying, but I really mean that.

Audience: I get the feeling that you consider yourself the kind of Pied Piper that you are talking about --

Audience: I was just going to ask you if you could "role play" for us how you would go about your magic.

Mr. Kaprow: It takes me a little time to prepare my act.

Audience: But when would these children come to you? Would they come when they are ready or when you are ready or your act is ready?

Mr. Kaprow: If you are speaking about yourself, which I hope you are, because as I said I don't pretend to have the confidence to go into the classroom of little kids. You know what you hear slowly out of the mist, boom! boom! boom! and it will get louder and louder and you will see a shadow on my head as I come through that door. Then you will say is that guy a nut?

Audience: You've got to deal with fourteen-year-old kids in Harlem?

Mr. Kaprow: I said I'm not. Incidentally, I have worked with fourteen-year-old kids. They are pretty great. I think I can handle that kind, but it's pretty frightening. I don't always know whether I can contain the situation, so it is purely out of respect to my inadequacies that I hold off. But your kind of kid, yes, absolutely. It sounds terribly presumptuous, but it is the only way I can really convey how important this kind of magic is. I think I can turn you on.

Audience: Could I ask you something else? Do you advocate a teaching methodology based on this kind of magic, I'm serious, or do you advocate getting rid of all methodology?

Mr. Kaprow: No. As I said, I don't advocate getting rid of whatever an artist wishes to use in the way of methodology. That is his privilege. But I am saying that we as theorists, as professors, (being one myself; you see I can include myself in this sort of thing) get rid of our theories and methods, and just let these other fellows play around a bit and see what happens. Ten years worth of playing. You know, fun and games. Backyard rituals. Cellar orgies. Whatever you want.

Audience: Are you talking about people who are really excited about what they are doing, or are you talking about people who are going to excite others?

Mr. Kaprow: It is almost always the case that if a guy is turned on by himself, he happens to be one of these magicians (of course not everybody is). This will be infectious; it is like disease. You know, you get within twenty feet and typhus! You know what I mean? I am trying to bring this down to really hostile grounds now. You know, like really "play the issue" for what it is worth. I think it will be infectious, yes.

Audience: Now, what will be infectious -- the individual's or his excitement about what he is doing?

Mr. Kaprow: I don't think that one can distinguish or needs to. What I have seen, and perhaps you have, also, is a man or woman here or there working in these store frontsor church basements or whatever have you conducting classes for kids the results of which and comradry of which is just overwhelming. Compared to this the school stuff I have seen is rubbish. Now, that's what I am talking about. I wouldn't touch them because I just don't know how. I work with your type and my type, and I just cut myself out of this. I simply am trying to propose something of which I am aware, and it may be very risky, and as I said before, a complete flop. But I am only saying let's take the chance. Why not? Nothing else is doing any good.

Audience: In your talk of an experiment of this type, what kind of teachers can be drawn on? The artist and painters in our colleges and young people coming out might want to develop this with you. Is there something we can do in preparing these people to make them better art teachers?

Mr. Kaprow: I don't think so. Except to encourage them in this experiment. You say to some guy or girl when they are graduated, "Look, there is this here job. I have been watching you from behind my shades, and I think you may have something to offer. Would you like a chance at it? They pay you ten grand a year to do this, and at the end of the year if you don't like it, then try somebody else." Really make it a prestige job and encourage such people as you think might be able to succeed to go into it. That's where you could help, but as far as the training you give them or I give them, forget it.

Audience: But earlier you talked about the artist. I think one of the characteristics of a highly artistic person is that he puts everything else down. I think one who is truly committed to his art and his way is to say that what everyone else is doing isn't really what I am doing.

Mr. Kaprow: This is truly not supported by the evidence. It's not; but I am pushing this act right now and making it as ugly as I can. But, believe me I am a very, very sane kind of mind about my own work. I am obsessed with it, but the evidence happens to be that a number of my students are fairly well known artists today, and their styles and their work is quite different from mine. The sympathy I have shown and help I have given to certain artists who are not my students are also known. I am saying this only to indicate that as crazy a guy as me even likes other persons' work. Now there are people who are not nearly as crazy as I am, and their generosity is enormous. It really isn't true that artists are so exclusive that they can't see beyond the tip of their paint brush. It's not true.

Audience: I don't mean to imply that they can't see beyond the end of their paint brush, but how are they going to function in a conservative institution, and a school is a conservative institution?

Mr. Kaprow: It comes to this now. I was hoping we could avoid this, but you have got a real problem there of which I am quite sensitive. There is a little town in Missouri -- let's say St. Joseph. I've been there, so I am thinking of that -- and it just happens to be out of Kansas City or St. Louis. An artist graduates who would be a beautiful candidate for a school which is sympathetic to such an idea. First thing you run into is parents. What's this wild and woolly guy doing to my kid? What are they doing in that classroom? Look at the nonsense they are making. The guy's got "nits in his hair". It's a problem. So my feelings here, they are very tentative ones, are to suggest that we need social scientists to help, otherwise known as "p.r. men". Like advance guard, they set up the scene, they do reconnaissance, they soft-soap, they persuade. They say, "look here, this guy's got gold in his hands, he's got fever on the brain but it's worth it; and your kids will benefit". Now, you can't say it the way I am saying it. That's why I wouldn't dare try this, but it all boils down to that "cold turkey stuff". That's why in my proposal I have suggested that we get social scientists to work along with us, and educators, in fact if any of you are sympathetic to this because in this area you and others really are helpful. No doubt about it. Community relations are very, very important, and I didn't want to get into this problem because it is something I shall be talking about in a conference that I hope to be able to organize in the fall. The reason I don't want to talk about it is because I don't know how to handle the problem right now. I think I have just intuition -- a hunch -- that in principle the idea is worth trying, on a very limited scale, to be sure.

Audience: A limited scale, as far as I can see, would only give findings from one relationship because that is the only relationship in which you would be operating. How could this be generalized?

Mr. Kaprow: I don't think so. Let's take positive advantage of mass hysteria and group feelings. You get one person who operates on a different kind of level than he does with his cohorts. Pied pipers (according to the story) or the pied piper function takes advantage of mass hysteria. The crowd roars and boy it's infectious. Isn't very civilized what I am saying, is it? Okay, let's run that danger. I think what you are going to find out is that the people of whom I am thinking about are the most ethical in the world. If you are not willing to take that chance, you may be running a metaphysical risk. What are you afraid of, magic sticks! I am willing to be sort of dogmatic here because I think it brings issues to a head. Are we setting up conditions of acceptance and good cheer, blandness, etc., or are we willing to take chances with what may possibly have to do with art? At least I have been asked to come here as an artist. I dropped my academic garb outside the door, and so I am trying to speak, perhaps, unkindly now for the sake of my colleagues, but I am trying to speak for them. This may possibly be what we need to think about now. What does this kind of character represent? Is he the model of virtue and politeness? I can be as kindly and well mannered as the next man, and most of the time I think I am. I am forcing the issue right now by trying to be otherwise because I think that maybe this is the way to get to the point that art just has nothing to do with all these little politenesses and verbages and analyses and clean classrooms. It just hasn't got it as far as I am concerned.

Audience: Will you elaborate on what you mean by nothing else is working?

Mr. Kaprow: Well, what are we here for if not to try to do something about the art education predicament in this country? Obviously, we are explicitly admitting to a pretty bad situation. We all agree. That's why we are here.

Audience: No I'm not admitting to your predicament.

Mr. Kaprow: We are not here to celebrate. All right. I'll be fair. I don't want to be fair though. I mean, this act doesn't permit that. You understand what I am talking about, you know, man to man and objectively speaking. Obviously here and there, thank Heaven, something is going on. I've seen it, too, even in the school system. By and large, we are here because, by and large, it "ain't no good", and we are all trying to do something about it. Now, I don't have the exclusive answer, but my act called for my saying it, only to push this one little suggestion. Here is a solution, possibly, a suggestion. Obviously some others have perfectly good suggestions, too. But slowly I can see the suit of clothes coming back on me. I'm throwing off this magic stick and time is drawing to a close, and I say, look, let's all try our best. We'll do a little this way and a little that way and maybe something will happen. Tomorrow night the magic stick starts waving again. Thank you very much.

THE PLASTIC ARTS, HISTORY OF ART AND DESIGN--THREE CURRENTS TOWARD IDENTIFYING CONTENT FOR ART EDUCATION

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There is a continuing theme that runs through my thinking about the problems of content development for art education--the need to conceive of the teaching of art within a context of twentieth century dynamics. For just as the contemporary artist must deal with the realities of his "present," the art educator must conceive of his role as part of the dynamics that mold and shape contemporary ideas and values. How simple it would be if facts and values in our experience were "fixed" and could remain stationary. Teaching in a relatively "closed" society with fixed values assumes clearly defined goals and procedures. Teachers can go forth with such confidence that questions of value and direction need not concern them. This circumstance, however, is not to be our lot. Today's reality (with which teachers must contend) is characterized by dramatic and continuous change. There is little security afforded by a world of indeterminate value. Fixed "truths" eventually give way to new concepts and dimensions for thought and action. Change and anticipation of change have themselves become the fixed ideas for dealing with our world. For many people, the difficulty in adjusting to continuous change is the cause of their creating more rigid conceptual and operational structures. It is as if some would say, "Stop the world, I want to get off!" Theirs is a longing for "basic" and "fundamental" truths that provide stability and confidence for dealing with the future. Such attempts to act as if we could bring things to a halt, as if the factor of transformation was not upon us, only serve to heighten a sense of frustration and failure. Things keep changing anyway.

Changes that can be seen in art and art education are not isolated phenomena. There are dramatic and far reaching changes in present day science and technology. Our most dramatic changes have occurred since the nineteenth century. Nineteenth century science was founded on the ideas of Newton and Descartes. Fixed categories in our concepts of time, space, and causality enabled man's projecting and establishing knowledge about his world. Today's discoveries have outstripped the ability of any individual to synthesize and internalize all of knowledge. Contemporary man experiences a strange uneasiness as he views the advances of scientific knowledge. The changes that are brought to our attention on political, social, and economic fronts give pause as to our movements toward the future.

For the "man in the street" and the parents of the children who are in our schools, the drama of our times is very real. One has but to look at population statistics: about twenty five percent of all the human beings who have ever lived are now alive. It is projected that our world population will double itself within the next forty years. I can only observe along with Harold Rosenberg "that vast shiftings of population, both geographically (through migrations, exiles, displacements) and vertically (through revolutions, mass education, equalization of opportunity), have destroyed the historically stabilized character of individuals and introduced the problem of identity, personal and collective as a dominant theme of contemporary cultural forms." Add to this the impact of computer technology. Computers are now available to perform many of the tasks previously performed by men. Devices can carry on functions involving the storage and retrieval of information (memory), the organization and sorting of information (analysis), the relating of information to possible actions (decision-making), and the carrying out of specific actions (operations). Automation and computers have had a profound effect upon our work force. For the first time in human history there is a prospect for a society able to shrug off the need for manual labor--machines can do the work for us.

The impact of science and technology upon the ways we think and act is great. It is staggering to contemplate the implications of this shift upon human perceptions, aspirations, and values. Alvin Toffler addressed himself to this point in a recent article, "Even our conceptions of self will be transformed in a world in which the line between man and machine grows increasingly blurred. It is now almost certain that within a matter of years the implantation of artificial organs in human bodies will be a common medical procedure. The human 'body' in the future will often consist of a mixture of organic and machine components. What happens to the definition of man when one's next-door neighbor or oneself may be equipped with an electronic or mechanical lung, heart, kidney, or liver, or when a computer system can be plugged into a living brain? How will it 'feel' to be part protoplasm, part transistor? What new possibilities will it open? What limitations will it place on work, play, sex, intellectual or aesthetic responses? How will it feel to have information transferred electronically between computer and brain? What happens to mind when body is changed?" (Alvin Toffler, "The Future as a Way of Life," Horizon, Summer, 1965, p. 112).

There have always been the alarmists, those who would offer prophesies of doom and disaster. Moreover, there have always been those who would place their own training and concerns at the front in offering solutions for larger and more pervasive problems than could properly be undertaken by their disciplines. I trust that I shall not be placed in either of these groups. Neither doctors, lawyers, biologists, physicists, religionists, and yes, art educators can do the job alone. Nevertheless, it does seem to me that art educators cannot avoid the obligation of conceiving of their role and function as part of the many forces that can help shape human life in the years to come.

Anyone viewing the range and diversity of human ideas and achievements is faced with such multiplicity as to approximate infinity. Through mass media and communications involving the past and present we can be made instantaneously aware of ideas and images the world over. The unique differences in settings, chronology, and circumstance (to say nothing of individual differences in people) are such as to give one a sense of humility, a sense of being part of a vast and complex scheme of things in which each man is, in the end, faced with his own limitations. At the same time, there is the fact of existence, the potential for wonder, excitement, and unique insight. There is the sense in which men may join together, in the sharing of insights, in furthering knowledge and understanding, in making possible a more informed and disciplined basis for human thought, understanding and action. I take this to be the central concern for the educational enterprise.

At the risk of gross oversimplification, I shall approach the problems of art education by stating the obvious: one of the factors that distinguishes man from all other animals is his capacity to project ideas and feelings in symbolic form. The forms that are created serve to embody and reflect, indeed sometimes to modify these ideas and feelings. They serve as the means by which people communicate with themselves and others; they serve as the mechanisms for establishing and transcending knowledge and tradition.

Visual signals have always been critical to man's thought processes. As was stated by Kepes, "Every properly functioning human being transforms the visual signals that he receives from outside into structured, meaningful entities. Without the perceptual ordering of his sense responses into images of things in space, man cannot orient himself. Without shaping his physical environment in accordance with these images, he cannot survive. His capacity to structure his environment according to his needs--that is, his ability to work out a rapport with his world--determines the quality of his life." (G. Kepes, Introduction to Education of Vision, p. 1). In today's world we are witnessing a dramatic shift toward visual imagery as a means for conveying and realizing ideas. Modern technology has made it possible to reproduce and convey our symbolic images with greater speed and intensity than ever before.

The field of art education concerns itself with educating people for greater control and understanding of visual images and forms broadly conceived as art. Usually this involves education in studio practice as well as historical and critical study of art (to include architecture and design). As I conceive of the field, it seeks to educate for knowledge, understanding and application of aesthetic dimensions in the visual forms we experience.

Study of human achievements must seek out the resultant forms of human thought and activity; put more simply, what man is is reflected and revealed by what he does. Our earliest records of symbolic activity are man's images. There is still some conjecture about the first attempts at art being born of accident. However, it is clear that what may have started as random and uncontrolled markings led to those physical and conceptual controls that suggested resemblance between movement, form and reality. Men were able to take the step of consciously abstracting images from the materials and forms about them; they were able to exercise controls over these forms. Their images became the embodiment of their environment; controls exercised over their images provided a sense of control over that environment.

The forms of art have changed from era to era, so has the role of the artist. Anyone viewing the broad traditions of art is forced to the inescapable conclusion that there are no single, fixed properties for establishing a particular form appropriate for all art. Artists engage in the creation of new forms; these forms, in turn, provide a basis for continuing evaluations and definitions. Explanations of art must deal with particular objects in particular contexts. Any attempt to view the broad area of art, past, present, and future, must account for the open-ended and metaphoric nature of aesthetic forms. For example, through painting and sculpture, some artists have devoted themselves to the exploration of "pure" form, faithful to an almost Pythagorian ideal of geometric harmony; others have courted the expressive and random qualities of a spontaneous, unplanned utilization of materials. Some painters and sculptors have sought to embody a lyrical and serenely poetic content; others have tried to communicate a sense of violence, tragedy, and despair. Some art forms were created as part of a clearly established tradition; other art forms have been shaped in periods encouraging and supportive of dramatic innovation and change.

Obviously, art is not produced in a vacuum; no man is independent of his predecessors. Artists, like all other men, are born into a stream of traditions and events. In part, the culture's language, images, and customs structure his values and expectations; in part, each man is unique. No two persons or events can be found on the precise coordinates of time, space, and action. No event ever repeats itself in precisely the same terms. People put together their structure of understanding and concepts (their "reality") by relating the variety of events (real and imagined) with their knowledge and expectations. In this transactional setting, timing and circumstance combine as key factors in shaping individual abilities and directions. Artists, indeed, all men, are in tension with their environment--in part, shaped by its circumstances; in part, driven by human capacities to transcend these circumstances. Actions become inventive by departing from the forms of preceding actions. The degree, extent, and significance of these departures vary in relation to the individuals themselves as well as their time, setting, and value patterns. Utilizing such an "evolutionary model" to account for the artist, "the variations or innovations tend to be almost imperceptible in stable cultures and to be more abript and radical in fluid cultures. Some innovations are incorporated into traditional styles, and others become the root of new styles which often grow alongside the older ones. Poorly adapted innovations either are summarily rejected or, if they are potentially viable, lie dormant to act upon a later, more congenial environment. So while the individual imagination generates change, society, including artists, guides its rate and direction; but only by post-facto selectivity; the environment can prompt imaginative solutions by posing challenging problems, but cannot itself formulate solutions." (James Ackerman, "Art and Education," The Nature and Art of Motion, edited by Gyorgy Kepes, p. 39). (Also see George Kubler, The Shape of Time).

Given our time of rapid innovation, there are those who have come to equate "change" with progress. Having done so, they proceed to talk about changes in a field as necessarily constituting "progress" in that field. There is, however, no reason to believe that special conditions exist today that make for "progressively better" art forms than have been created in the past. At all times, the artist has engaged in the creation of form. In varying degrees, this has involved the exploration of reality--the shaping of ideas and feelings in a medium in relation to the values and purposes of his time. In the end, that which makes it art is that which makes the form an organized expression and realization of value. "For although man is not the master of the elements imposed on him by life, which presses on him from all sides and molds his own nature, he is the master of the value he ascribes to these elements in his capacity as spectator, or of the value with which he endows them in his capacity as creator. Whatever the pressures to which he may be subjected, he always preserves his capacity to judge them, to determine their value, aesthetic or moral, and by this token he remains indomitably free.

The more insight the history of art gives us into the necessities that form the artist, the more nearly it liberates us from the temptation of formulas, theories, and fashions, because it shows us that these things, being subject to perpetual change, are relative and vain. The only permanent thing is quality, which cannot be reduced to a formula or a definition." (R. Huyghe, Ideas and Images in World Art, p. 438).

What I have attempted to do thus far is set forth some very broad generalizations as we contemplate the more specific issues of developing theory and practice in the field of art education. The key points, that I trust I have made, give emphasis to the environmental dynamics of twentieth century living, the continuity and pervasiveness of visual forms as expressions and realizations of human thought and feelings, and the changing nature of art forms themselves. The content of our art programs should be conceived with these points in view. The resources for establishing "content" can be drawn from the disciplines of artists and designers as they shape visual forms, art historians as they study art forms of the past, and critics as they elucidate art forms of the present. Art should be seen as a basic human activity requiring sensitivity and understanding in the visual choices we make. Given this attitude and point of view, our schools would become centers for a vital and active confrontation of works of art. Our studio classes would be conceived as laboratories for the exploration of ideas, materials and techniques within the student's symbolic framework. Works of art could then be removed from the necessity of being "masterpieces," of somehow being given a stamp of approval by someone or something apart from life that makes them "worthy" of being seen. While I do not agree with it in full, I am much attracted to George Kubler's supposition, "Let us suppose that the idea of art can be expanded to embrace the whole range of man-made things, including all tools and writing in addition to the useless, beautiful, and poetic things of the world. By this view the universe of man-made things simply coincides with the history of art." (G. Kubler, The Shape of Time, p. 1). It then follows that the universe of man-made things can become the resource for study and speculation; the focus of such study would be understanding those factors that pertain to the aesthetic and artistic qualities inherent in these objects.

In some degree, each student is himself a symbol-maker; he brings some background of choice and discrimination in his visual world. One can observe certain general factors in the development of a child's image-making capacities. There is, at first, an undifferentiated and uncontrolled "marking" that results from a child's developing sense of movement and touch. What begins in a rather haphazard fashion soon leads to the exercising of physical controls over these "markings"; children's scribbles take on qualities of controlled repetition and clearer definition of form. Of equal importance, children learn to relate their movement and markings to ideas. They become aware of the power of symbolization for projecting and realizing ideas and feelings. Beginning from simple and uncontrolled motor projection, children move toward image-making as a means for invention and communication. As part of their language they develop schematic representations of their reality. The writings of Viktor Lowenfeld, Dale Harris and others have documented the developmental aspects of children's drawings. What is important to note is that children, like artists, can be seen as entering the stream of traditions and events. Their capacities and drives are combined with factors of setting, timing, and circumstance in shaping their abilities and directions. Like artists, children are in tension with their environment--in part shaped by its circumstances; in part, driven by their capacities to transcend these circumstances.

In the process of a child's forming an image, the emerging form takes on an identity of its own. The artifact suggests its own form and meaning. The form being created can be said to be the expression of an idea; it is also the means by which the creator (student and/or mature artist) realizes and is shaped by the artifact itself. This thought has been expressed by Henri Focillon: "As for me, I separate hands neither from the body nor from the mind. But the relationships between mind and hand are not, however, so simple as those between a chief accustomed to obedience and a docile slave. The mind rules over the hand, hand rules over mind. The gesture that makes nothing, the gesture with no tomorrow, provokes and defines only the state of consciousness. The creative gesture exercises a continuous influence over the inner life. The hand wrenches the sense of touch away from its merely receptive passivity and organizes it for experiment and action. It teaches man to conquer space, weight, density and quantity. Because it fashions a new world, it leaves its imprint everywhere upon it. It struggles with the very substance in metamophoses and with the very form it transfigures." (H. Focillon, The Life of Forms in Art, p. 78).

Obviously, the overall problem of identifying what is to be "taught" in art education programs involves us in different kinds of specifics. For example, the four or five year old who has moved through stages of undifferentiated markings to the development of simple schema to represent man, sun, house, tree, etc., is still operating from an egocentric vantage point. The problem for him is still the relatively simple and personal task of inventing symbols that convey generalized meaning. His concerns are focused upon his own involvement with the image he creates. When new forms (or schema) are "invented," they are repeated and reinforced until such time as the schema are no longer adequate to embody and reflect active meanings with which the youngster is involved. Children then seek to change and enlarge upon their repertoire of images for the drawings they make. Given the growing complexity of ideas and feelings that they face as well as their increasing social awareness, the problems attendant to artistic expression become much more complicated. The inner-directed and ego-centered beginnings of visual expression soon are merged with forces external to the youngster. Environmental factors, traditions, and values gradually exert their force upon the growing child. Factors of reinforcement and reward as well as the structure of language and other means of communication impose themselves upon him. Indeed, our institutions (the school, the church, etc.) exist as formalizations of these values and directions.

Thus, I trust that I have now brought two other generalizations to the broad outlines against which I am attempting to dicuss the problems identifying content in art education 1) children make images as part of their normal and natural growth and development. Image making is intimately related to developing their capacities for symbolization and thought; 2) making images is the resultant of complex forces within and external to the individual. To the degree that a child is actively involved in the shaping of his ideas and feelings through image making, he is also involved with a complex of purposes, values, and motives.

Just as one might observe changing styles and purposes in the creation of artifacts, one can also observe changes in the roles accorded to and assumed by artists. In the Middle Ages, an "art" was a technique; those persons who engaged in the making of painting or sculpture were seen as engaging in a lower level of mechanical activity. Painting and sculpture were considered as being merely sensuous and manual. Art served to represent the Divine; the artist was only the medium through which this representation was made visible. Given these circumstances, there could be no interest in the autonomy of the object or the individuality of the artist. Hence, it is no wonder that archaeologists and historians have great difficulty in identifying individual artists of the Middle Ages in relation to the artifacts they produced. It was not until the Renaissance that the concept of the artist as an individual and the work of art as the resultant form of human sensory, intellectual, and practical faculties appeared. Gradually the painters and sculptors began their ascent from the role of craftsman and artisan to a position more closely aligned to that of the humanist: the poet and scholar. This change had (and continue to have) its impact upon the forms of art; it also has had broad implications for the role of the artist. The change should be seen as part of a larger development involving the growth of individualism and the dramatic forces that were to develop in the Industrial Revolution. The displacement of artisans by machines and the popularization of ideas of freedom characterized a new stream of cultural change in whose force we still live. By the 19th century, artists saw their role as part of a larger declaration of independence against the ordinary life of their times. Theirs was an affirmation of the integrity and strengths of the mythical free individual who had become their ideal. They abandoned the strictures and limitations of the guilds and the seeming security of patronage to turn toward a more personal cause. As part of this role, they endured the material hardships of poverty and neglect; they did so in order that their art grow from individualized and personal directions. (See Gereldine Pelles, Art, Artists, and Society).

The late nineteenth century marks a critical point of origin for many of the problems and developments we face in art education today. As the artists turned from the crafts and those elements of commonly defined values, there was still another development in scholarly and humanistic study involving works of art. At that time historical analysis and the interpretation of artifacts was a comparatively recent addition to the academic disciplines. As Professor Taylor has indicated, while artists turned toward their own inner subjective feelings as a basis for their work, art historians tended towards a greater belief in objectivity and analytical systems for dealing with works of art. For the most part, the beginnings of art history as we know it can be found in Germany. There are those who contend that the resultant "Teutonic" methods and early institutionalization of the discipline served to create rigid and unnecessary limitations for the field. What is generally agreed, however, is that art history as it has developed in the United States was strongly influenced by the work of German scholars and teachers. By the twentieth century, the United States had a small but energetic group of art historians that had come to the field from classical archaeology, theology, philosophy, literature, architecture, and other fields. As was described by Erwin Panofsky: "At the beginning, the new discipline had to fight its way out of an entanglement with practical art instruction, art appreciation, and that amorphous monster 'general education.' The early issues of the Art Bulletin, founded in 1913 and now recognized as the leading art-historical periodical of the world, were chiefly devoted to such topics as 'What Instruction in Art Should the College A.B. Course Offer to the Future Layman?'; 'The Value of Art in a College Course'; 'What People Enjoy in Pictures;' or 'Perparation of the Child for a College Course in Art.' Art history, as we know it, sneaked in by the back door, under the guise of classical archaeology, evaluation of contemporary phenomena and, characteristically, book reviews. It was not until 1919 that it was permitted to lift its ugly head in large print. But in 1923, when the Art Bulletin carried ten unashamedly art-historical articles and only one on art appreciation, and when it was found necessary to launch a competing periodical, the short-lived Art Studies, the battle was won." (E. Panofsky, Meaning in the Visual Arts, p. 324-5). It is however, the larger issue of the "war" (not the "battle") that concerns me. I shall return to this point later. Presently, I only want to observe that there was (and continues to be) a current toward specialized and objective scholarly inquiry in the history of art.

There is still another large stream of development against which present day art education needs to conceive of its role and function: the developments in contemporary design. Just as there have been dramatic changes in the concept of the artist, there have also been changes in the concept of the designer. The notion of a designer is a relatively new idea growing from the Industrial Revolution. Prior to industrialization, the designer was not seen as being set apart from the producer; indeed, it is only the consequences of specialization and mass production that has brought him into being. In the 19th century, John Ruskin and William Morris set into motion the idea that the artist and craftsman had central roles to play in the making of useful objects. Theirs was a reaction against the standardization and impersonalization of the machine. This reaction led to the decorative flamboyance of the Art Nouveau Movement; the movement was short lived because of its inability to adapt to the new requirements of the industrial age. What was set in motion, however, was an increased awareness of growing technology and the aesthetic and functional needs of man.

In 1919, the Bauhaus was established at Weimar. Its stated purpose was to unify the arts and crafts toward future synthesis with architecture. At that time, the terms "industrial designer" or "planner" did not exist. It was the Bauhaus that gave emphasis and direction to the concept that the production of products and architecture needed not only the insights and understandings of engineers but the imagination and sensitivity of artists. In general, the school represented a movement away from the romantic tendencies of the 19th century toward the rationalist current of the 10th century. Neo-plasticism, constructivism, and photography tended to replace the decorative emphases of the arts and crafts as well as the classical and romantic stylistic tendencies of the plastic arts. A rationalist aesthetic for industrial production began to take form. However, in retrospect, there are those who point to the Bauhaus as having fostered another kind of formalism.

What is important to note is the development of a design discipline that, in many ways, is separate and distinct from that of the artist: the painter, sculptor, and potter. To be sure, artists and designers deal with the organization of visual and plastic elements; they each require aesthetic insights. Designers, however, assume responsibilities in a more immediate and functional context. "It is the organization of materials and processes in the most productive, economic way, in a harmonious balance of all elements necessary for a certain function. It is not a matter of facade, of mere external appearance; rather it is the essence of products and institutions, penetrating and comprehensive. Designing is a complex and intricate task. It is the integration of technological, social and economic requirements, biological necessities, and the psychophysical effects of materials, shape, color, volume, and space: thinking in relationships." (L. Moholy-Nagy, Vision in Motion, p. 42).

Given the three directions stemming from the nineteenth century in the plastic arts, the history of art, and the design disciplines, it would be interesting to make brief note of what was happening in our schools with regard to an emerging field of art education. From the time of Walter Smith's arrival in the 1870's, the focus of art education was upon the training of skills in drawing and the crafts. A nation involved in the "important business of growing up"--expanding and developing its frontiers, and building its industry and agriculture had little or not time for the fine arts. Education was tied to utilitarian principles; education in the fine arts could be only part of our leisure time activity or, at best an activity of moral enlightenment. It was not until the 1920's that John Dewey and the Progressive Education Movement started to formulate a viewpoint of art forms as the resultants of a creative process and the centrality of such process to educational goals. It is easy to see how the many factors operating to shape programs in art education then led to considerable confusion and disarray. On the one hand, there were the dramatic changes taking place in the plastic arts themselves. The paintings of the post-Impressionists -- Van Gogh, Gauguin and Lautrec; the works of artists such as Monet and Cezanne; the Fauve outburst; and the birth of Cubism all seemed to reach America's shores at once. These forms excited our artists; they opened a new realm of possibility; and created another image for art. This new "image" carried with it considerable confusion and distrust. For example, one need only look at the public's negative response to the Armory Show in 1913. Make no mistake about it, many of our "art teachers" responded in a similar manner. Then there were the forces from an emerging field of art history. Art historians struggling for their own identity within a community of humanistic scholars could only look with disdain upon programs in art education that focused on technique and utilitarian values. Moreover, the rapidly changing art forms of the time did not lend themselves to their systems of objective categorization. Hence, art historians seemed to cast aside their concerns for the present and turned more and more toward unassailable but limited techniques for describing the past. The design disciplines created still other forces. On the one hand there was a growing academism from the Bauhaus tradition, a stylistic centered tendency rather than the initial intent of men such as Gropius or Moholy-Nagy; on the other hand there was the massive intrusion of the values and needs of commerce and advertising upon design programs. Students in our design schools were then trained as "commercial artists," "stylists," or decorators. Ironically, public school programs were able to grow in so mixed a soil. That is, there were growing numbers of art teachers, schools with art programs, and money and materials devoted to their efforts. It might even be said that art programs grew because of their very lack of clarity. Art programs became "all things to all people." However, as one moves about our schools today, it is apparent that some of the elements of confusion and contradiction stemming from the turn of the century are still with us. Given the prospect of continued change (and doubtless, greater challenge) it is essential that we take stock of the current status and directions for the field.

Let me be clear about one point: I do not see the need to clarify our contradictions and confusion in order that there be greater regimentation in what art teachers do in their classrooms. I see no panaceas of a single established national curriculum or methodology for teaching. Indeed my proposal is that we actively seek multiple directions in our research and inquiry. However, to do so involves the willingness and obligation to be informed and knowledgeable about a range of factors that contribute to establishing content in art education. Recognizing that the fields of the plastic arts, art history and design provide changing referents, there is the obligation that any specific inquiry be in constant tension with the larger ground in which it exists. In this paper I have sought to establish a larger ground against which we need to conceive of and develop the content of our art programs. The particular cues that I have taken are man himself, his symbols, his art and those larger tendencies in the plastic arts, the history of art, and design stemming from the turn of the century. I would also observe that these tendencies have taken still another turn in more recent years. These changes can and should have a great impact upon art education.

The changes that have come about as a result of scientific and technological accomplishments have had a profound effect upon men. As I stated at the outset, today's images are conveyed instantaneously; they are enlarged and made more pervasive. The "realities" of Viet Nam, a college course in Botany, the United Nations, and the Miss Universe competition are made available to us by a flick of a knob. We are made symbolically aware of the drama of a world in conflict and turmoil. This has had a tremendous effect upon artists. In his paper prepared for this conference, Harold Rosenberg points to the problem of identity as an issue of personal and collective life. "Art movements in the 20th century have tended to swing back and forth between extreme affirmations of individual self-consciousness and self-negation through efforts at anonymous production or group identification. The values of expressionist art, on the one hand, and of the neo-realistic and science-derived modes, on the other, have been related to this dialectic or identity." He then points out that "failure to see modern art against the background of the politico-cultural crises and revolutions of our time results in emptying contemporary painting and sculpture of content. Critical discussion is deprived of serious intellectual reference and tends to be reduced to recitals of the history of formal development presented as arguments in support of personal tastes." Anyone viewing the art of our time must view it for its ideational meaning, its significance as an act of man apart from the craft or beaux arts traditions of the nineteenth century. Contemporary art faces man with decision and action in relation to its own intrinsic drama and meaning. This, it seems to me, was the great breakthrough of Abstract Expressionism. As Rosenberg put it: "In that it dared to be subjective, to affirm the artist as an active self, Action Painting was the last 'moment' in art on the plane of dramatic and intellectual seriousness. The painters in this current have kept to the tradition of the human being as the ultimate subject of painting." (H. Rosenberg, The Anxious Object, p. 46-47).

Given a greater sense for the changing forms and styles in the traditions of art, made more aware of the changing purposes and values motivating the creation of art, and conscious of new materials and images, today's artist is, at once, faced with an infinity of possibility and the responsibility of his own choice. This is the same problem faced by artists of the past. As Ad Reinhardt put it: "The next revolution in Art will be the same, old, one Revolution." Nevertheless, today's artist is faced with the relatively new problem of being aware and motivated by so much that he is forced to greater awareness of himself and his actions; today's artist is (in Allan Kaprow's world) "a man of the world." Operationally this change is reflected by the many artists now actively participating in our colleges, universities, and museum educational programs. It seems to me that it is no accident that artists are more involved with institutions of education rather than the church. Their concerns are of a social nature. Ironically, this concern can best be fulfilled by being "themselves." Thus it is possible for Ad Reinhardt to say: "Art-as-Art is a concentration on Art's essential nature. The nature of art has not to do with the nature of perception or with the nature of light or with the nature of space or with the nature of time or with the nature of mankind or with the nature of society or with the nature of the universe or with the nature of creation or with the nature of nature." Yet in the same article he asserts: "The next revolution will see the fading away of old unschooled, "school of hard knocks" artists telling young artists they need not go to school" . . . "the next revolution will see the emancipation of the university-academy of art from its marketplace - fantasies and its emergence as a 'center of consciousness and conscience'." (A. Reinhardt, "The Next Revolution in Art," Art News, February, 1964, p. 49).

Many have referred to schools as the emerging patrons of the arts. A more realistic view is that they may emerge as centers for artistic activity. Presently, it must be said that the arts are still "uncomfortable guests" in a burgeoning household. They are told that they are "welcome;" but, "in their hearts," they are not certain it is so. There is, however, a growing positive note, namely, that our schools (in particular our colleges and universities) can provide a viable alternative to the commercial gallery world. More and more, one can hear the leaders in education speaking out in behalf of the artist. One of the more eloquent of such statements was made by James A. Perkins, President of Cornell University: "Artist beware, but university prepare. Let the artist learn where his real talent lies and how it can be most effectively adjusted into a university environment and protected from what is inimical to its development. And at the same time, let the university recognize the need for the special treatment required for creative talent whether working in the field of the arts or in other fields.

And, although the idea may be startling, it is by no means certain that in this process the artist on the campus may not make a greater contribution to the future of the university than the university can make to the future of the artist." (J. Perkins, "Should the Artist Come to the Campus," Saturday Review, July 17, 1965, p. 71).

In sum, the picture as I see it is that of the contemporary artist faced with and aware of the dynamics of the twentieth century. Like today's scientists, he is interested in relationship functions. The nature of the challenge and his commitments are such as to draw him closer to educational efforts. Unlike our preceding century, his primary contribution is not seen as teaching a craft in an isolated context. The art of today places its emphases upon visual form as an idea (as that form which structures the many facets of sensibility and imagination).

Lest I have presented an overly optimistic view of artists marching en masse toward the "good of man," let me hasten to remind you that there are still questions as to who "declares" himself to be an "artist." In a period when the elements of craftsmanship have given way to the lure of ideational fluency and the resultant art forms are more inviting of diversity, problems of value judgment become even more critical. Above all, we should not hold forth any naive assumptions about necessary relationships between the declared "artist," values in critical judgments, and moral and/or ethical values of man. Given the dynamics of our time, critical judgments are more difficult to make. What I have noted is that the concerns and contributions of artists are becoming part of the valuing process in our educational institutions. These concerns, however, need to be seen in relation to the traditions and nature of the discipline. In this regard, I would note some hopeful developments in the history of art.

Earlier, I referred to the beginnings of the history of art and efforts to establish the discipline in this country. It is easy to see the rationale for using a European model of the discipline as a basis for developing the field in this country. As has been pointed out by Professor Taylor, there was an initial press for "objectivity" and analytical method at the very time that contemporary art moved toward more subjective and dynamic values. James Ackerman described this state of affairs: "The Philosophy of art history of the last generation could be called antiphilosophical; it taught nonintervention, not only in the sense of avoiding value judgments, but in the sense of minimizing the factor of creativity in historical scholarship." (J. Ackerman, Art and Archaeology, p. 142).

While efforts were being made to emulate the European model of Art History, there were also forces that contributed to deviation from that model. I will not reiterate the dramatic changes that have taken place in the forms and styles of art since the turn of the century. Suffice to say, historians have had to review and revise their categories for dealing with these forms. In so doing, there has been a growing awareness of the creative component in their discipline. This change was part of a larger change in historicism itself: The subject matter of history became human life in its totality and multiplicity. It was the historian's aim "to portray the bewildering, unsystematic variety of historical forms - people, nations, cultures, customs, institutions, songs, myths, and thoughts - in their unique, living expressions and in the process of continuous growth and transformation. This aim is not unlike the artist's; at any rate, it differs from the systematic, conceptual approach of the philosopher." (Hans Meyerhoff, The Philosophy of History in Our Time, p. 10).

Art objects provide the primary data for the art historian. Inevitably, conflicting opinions and interpretations come into play as historians attempt to illuminate a particular work. This is especially the case in that art objects are valued for their intrinsic qualities rather than their functional rationale (if any). Cultural change and the passage of time do more to alter the context in which a work of art exists and the way it is perceived than does any change such as wearing or deterioration in the work itself. The object stands as a primary datum for hypothesizing about the past. Works of art can also provide some of the distance for developing insights into our own times. Inevitably, engaging in such inquiry and speculation involves critical and evaluative judgments. Any attempts to separate "fact" from "feeling" about works of art only lead to limited frames of reference. This kind of separation fosters thinking that arbitrarily separates the work of art from the observer. What is neglected is the fact that our perceptions of objects are "colored" by our values, training, and expectations. The observer affects the definition of that which is being observed. Objectivity and subjectivity as factors in visual perception are not that easily pulled apart.

Changes in the history of art have moved the field toward greater awareness of the dynamics involved in historical method. This has resulted in the possibility for a different kind of communication between art historian and artist. The basis for such communication is not that of adversaries trying to "capture" the work of art; rather it is the communication of men who engage in separate disciplines where each might inform the other.

Design as a discipline is perhaps the most recent of the three tendencies I have identified as providing a basis for establishing the content of our art programs. I would observe, however, that it poses an educational problem of equal complexity and significance. As I have viewed the disciplines of studio production and historical inquiry as being separate, I would also view design as a unique discipline embracing a great variety of human activities. As relative "new-comers" among faculties in our colleges and universities, designer-teachers do not fit most of our existing patterns. Among some, design is seen as nothing more than an extension of a beaux-arts or craftsman's tradition. Product design then becomes a functionally oriented sculptural form; visual communication is no more than a category of the problems engaged in by painters and printmakers. Among others, design need be no more than an extension of engineering and other technological solutions. Design can then be relegated to a styling or decorative function. My contention is that neither role is appropriate. Design is both an art and a science in that it involves responsibilities for the functional and aesthetic planning of our man-made environment. To "design" involves the synthesizing of conscious and deliberate controls with intuitive and felt needs. Design is a dynamic process by which men seek rational and aesthetic solutions. Designers, architects, and planners must assume a primary responsibility for projecting our mass-produced and functional forms -- from visual images to small products to shelter and community requirements. Whereas our schools of design were conceived as vehicles for training craftsmen or advertisers (indeed, many schools are still organized for these ends), the direction that I want to identify is that of a design field moving toward a more significant challenge, one that will involve greater responsibility and discipline. Given the tremendous developments in mass media and production technology, given our pressing social and aesthetic problems, it is essential that the ideas undergirding the training of designers be above a crass commercial level and beyond the more limited concerns of the craftsman. Designers need to be trained to assume responsibilities in governmental as well as educational agencies; they need to participate in the shaping of aesthetic and social conscience as well as functional forms. In short, we will need to educate people to assume a major responsibility for developing initiative in advancing the art and science of conscious choice where products, physical facilities, shelter, and communications are concerned.

The overall challenge that I envision for art education involves developing theory and practice (including the challenge of content development) for educating for our world of vision and form. The three major currents I have projected are the studio production of art, the history of art (to include the whole range of man-made things involving beauty and intrinsic value) and the emerging design disciplines. In viewing these themes I have referred to the dynamics that gave them their character around the turn of this century. In each instance, one can identify the uniqueness of the disciplines as well as a growing interdisciplinary tendency, a greater awareness of relationships among disciplines. My view is that the field of art education (as it conceives its role in developing programs in our elementary and secondary schools and as it proceeds in the training of teachers) needs to pay attention to the distinctive as well as the related aspects of these disciplines.

Others at this conference will deal with the specific tasks of curriculum development and teaching methodologies. There are, however, a number of general considerations that occur to me as I contemplate the operational implications of what I have said.

The task for art educators in our elementary schools involves encouraging that which young children can do naturally - the creation of symbols that express their ideas and feelings. Human beings are essentially "symbolic" organisms; they learn to select information and "construct" it into a uniquely human world. Initial emphases should be on developing predispositions toward learning. Media and materials ought to be chosen with a view toward their potentials for being formed and shaped in terms of ideas to be expressed. Above all, the emphasis cannot be upon "expression" alone; nor should it be upon limited descriptive values. A youngster's expression or stereotyped form must not be conformed with understanding and communication. Children should develop a sense for recognizing their own power in giving shape to their ideas and feelings; they need to learn that what they do suggests other possibilities; they need to become aware of the poetry in their vision, of the drama in their lives. The basis for such learning should draw upon ideas and experiences that are part of the child's life -- the people he knows, the places he has seen, the ideas he has. As his intellectual and experential horizons expand, the potential for ideas and forms is thus enlarged. Above all, the structure of teaching art, at any level, must be done with a sense for a larger body of knowledge and insight that can be generated. The concept of what constitutes an "artistic" problem -- its limitations and possibilities -- is central to what is taught. What the teacher does is, of course, related to the students larger vision and insight about his field. In this regard, art teachers can do much to provide a broadened base for understanding the world of vision and form by bringing their students in contact with artists, scholars, and designers. The opportunity to talk with an artist in his studio; to visit with museum, gallery, and library personnel; and to see first hand, the working spaces of architects, planners, and designers cannot help but broaden their conceptions of these fields of human endeavor. The subject matter of art can thus be taken out of the realm of the "remote" and the "unreal." Generalizations about what artists, historians, and designers do would then have a more operational referent.

Whenever possible, children should be confronted with original works of art. I agree with Professor Taylor that they can be helped to recognize and realize their own abilities to make visual judgments and talk about these judgments. My own bias for using original works of art as teaching referents is related to the feeling that children need to manipulate and deal with tangible realties. So much in their lives is lived out of a "can," our mass culture provides an imbalance of predigested stimuli. Just as we would want children to develop confidence and skills for shaping their own ideas, we should seek opportunities for them to come to grips with the primary data of art. This is not to say that slides, photographs, and reproductions of art cannot be used in the teaching of art. Quite the contrary, these images can be used to expand and enrich the visual learning in the classroom. What should be avoided, however, is the exclusive use of "reproduced images" and the idea that paintings and sculpture can only be seen by their being projected on a screen. In the long run, the challenge is that of developing values and attitudes for dealing with all aspects of our visual experience. It is my supposition that young children can best develop these values by first hand contact with their own symbols and original artistic forms of others.

As children move through our schools, we should seek to develop increasingly sophisticated levels of sensitivity, insights, and skills about visual forms. Teachers need to help students approach problems at their own level; they need to assist them in projecting and testing their own personal criteria and standards of excellence against the standards and criteria that the teacher helps to evolve. In the elementary school it should be possible to develop a range of skills and techniques; it should also be possible to develop a sense for the broad traditions of art. In this latter regard the emphases need not be upon chronology, the memorization of dates and names, or the isolation of art from the broad areas of human concern. Children can be shown the many ways that artists have shaped forms dealing with the same or similar themes; they can be made aware of the many meanings contained within a single work of art; and they can become aware of how the same artist may have handled a particular subject in different ways. Professor Taylor's examples of a "sculptured T'ang horse and one by Remmington, a Lascaux cave painting and a race horse by Stubbs, a mobile by Calder and an energetic construction by Tinguely" could be extended endlessly by a resourceful and knowledgeable teacher. Artists have dealt with an infinity of themes for their work--man, work, play, life, death, nature, etc. Even the simplest of themes such as the "moon" or the "sun" can open tremendous visual and conceptual possibilities when one looks to the traditions of art. From the Celtic sun worship remains of Stonehenge to the Egyptian Sun-God Ra to the Sun-Temple of Konarak to Sun Gods in Aztec Culture to 13th and 14th century images of the sun to modern conceptions of the same subject as seen in the works of Rousseau, Klee, Max Ernst, Miro, and Lippold the teacher of art can draw upon a theme such as "the sun" to demonstrate how artists of other times and places have given meaning to the very subject matters that concern the students. Naturally some geographical areas will have greater advantage than others in the art forms that are available in local museums and galleries; some locations will have a greater concentration of artists and craftsmen. In all cases, however, imaginative art teachers can do a great deal in bringing together the available resources to expand upon the student's knowledge and insight about visual forms. In short, I would see the primary focus of art education in our elementary schools to be that of developing greater knowledge and awareness of our visual environment; building attitudes of discovery and invention in the expression and realization of visual forms; and encouraging conscious aesthetic choice and evaluation of these forms.

Beyond our elementary schools there are many possibilities for rethinking and reformulating our programs. The need for change that I see ahead involves the identification and development of knowledge and techniques to enable greater ideational fluency and aesthetic awareness. The forming of "ideas" (or "image") in any significant way is not possible without knowledge and control of technique. Every discipline has its techniques. What warrants possible criticism is not the teaching of techniques, but its narrow viewing as an end into itself.

Whatever biases and experiences I have lead me to the conclusion that studio learning should continue into the junior high school education of all students. Opportunities should be provided for students to become involved with materials and tools that provide greater physical and intellectual challenge. The primary datum of one's own experience is important in grasping the significance of visual forms. This is a period when attitudes toward discovery, abilities to court mystery and tolerate ambiguity are formed. It is also a period where more structured learnings are possible. Students should become more aware of the limits and possibilities for their tools and media; they can consciously seek inventive, aesthetic, and craftsmanlike solutions to the problems they undertake. At a minimal level, studio learnings should continue through the junior high school for all students and beyond the junior high school for those with expressed interests and aptitudes. I am, however, in essential agreement with Professor Taylor in his observation that there comes a point in the experience of most people when intellectual capacities for understanding and appreciation outstrip abilities to actually create the forms of appreciation. By the secondary school, those factors that differentiate the capabilities and interests of one individual from another become more apparent. Youngsters start to "sort" themselves in terms of personal directions and tendencies.

Alongside or part of programs of study with studio emphases, there is an important place for the study of art as part of our broad humanistic traditions. Currently, many of our secondary schools are developing required courses of study in which the history and criticism of art play vital roles. In some instances, there is instruction that includes contemporary film, mass produced images and products, or architecture as resources for study. To be sure, these programs differ in accordance with the strengths of the particular staff members involved. What is becoming apparent, however, is that the full content of our secondary school art programs can rarely be covered by one man. The knowledge and skills to be imparted are too diverse. Most secondary school programs (and their budgets) are conceived with a single art teacher in mind. Indeed, the present state of affairs is that all too many schools have not even reached this point; they do not have provision for a single art teacher. Our programs for the training of art teachers have, for the most part, sought to train generalists--persons competent to teach at all levels of the junior and senior high school (many carry this one step further through certification to teach art in grades one through twelve). My contention is that there is a need for greater depth and understanding in areas of content for our secondary school art programs. Our failure to achieve this depth and understanding has resulted in a generalized and vague image of the field.

As I have indicated, works of art can be seen as objects that illuminate history; works of art also exist apart from history with meanings to be derived in the present. Students in our secondary schools should be introduced to historical and critical method. We are also living in an exciting world of vision and form. Our students need to be made consciously aware of visual communications, products, architectural forms, and community and regional planning problems. All of this is to say nothing of developing their own capacities for the organization and expression of ideas through imagery.

The task ahead for art educators is overwhelming in its proportions. That is, it will be overwhelming if it is approached from points of view based upon a nineteenth century outlook. A beaux arts tradition, a "fixed objective base" for categorizing art historical data, or an arts and crafts approach -- each had its rationale developed in another time. If we are to meet the challenge ahead, it will be necessary to reorient our thinking to present day knowledge and dynamics.

There is a great deal to be done in clarifying concepts and developing instructional materials and strategies appropriate for educating students in the broad areas represented by the visual arts. No single "model" of what the art teacher should be like will suffice to meet this challenge. The field of art education will have to be made up of persons with differing strengths and interests that bear upon the larger problems of art education. A great deal will need to be done in areas not alluded to in this paper: teaching strategies, communication and learning problems, philosophical inquiry, and curriculum development. In this paper I have set forth some of our sources for content. The nature of the three currents described poses a special problem. The fields of the plastic arts, the history of art, and the design disciplines are themselves in flux, each reaching for broader ideational and operational significance. Our fields of knowledge and content will not stand still for us to fix rigid boundaries. Indeed, it is only as one moves with a field that the motion is not as disturbing. Secondary school art teachers will have to be persons who are themselves involved and motivated by the dynamics of their work. As they "move" with a sense for the scope and breadth of what artists, art historians, critics, and designers are about, they can convey some of this same sense to their students. As they "move" with the confidence of their own discipline and knowledge, they can help students to develop that same disciplined sense for facing the future that only they can make.

LIST OF REFERENCES

1. James S. Ackerman, "Art and Evolution," The Nature and Art of Motion, (G. Kepes, Editor), George Braziller, 1965, p. 32-39.
2. James S. Ackerman and Rhys Carpenter, Art and Archaeology, Prentice-Hall, Inc., 1963, p. 241.
3. Henri Focillon, The Life and Forms in Art, George Witterborn, Inc., 1948, p. 94.
4. Rene Huyghe, Ideas and Images in World Art, Harry N. Abrams, Inc., 1959, p. 447.
5. Allan Kaprow, "Should the Artist Become a Man of the Worls?," Art News, October, 1964, p. 34-37, 58-59.
6. Gyorgy Kepes, Introduction, Education of Vision, George Braziller, 1965, p. i-vii.
7. George Kubler, The Shape of Time. Remarks on the History of Things, Yale University Press, 1962, p. 136.
8. Hans Meyerhoff, The Philosophy of History in Our Time, Doubleday and Co., Inc., 1959, p. 350.
9. L. Moholy-Nagy, Vision in Motion, Paul Theobald, 1947, p. 371.
10. Erwin Panofsky, Meaning in the Visual Arts, Doubleday and Co., Inc., 1965, p. 362.
11. Gereldine Pelles, Art, Artists, and Society, Prentice-Hall, Inc., 1963, p. 180.
12. James A. Perkins, "Should the Artist Come to the Campus?," Saturday Review, July, 1965, p. 54-56, 71.
13. Ad Reinhardt, "The Next Revolution in Art," Art News, February, 1964, p. 48-49.
14. Harold Rosenberg, The Anxious Object, Horizon Press, 1964, p. 270.
15. Alvin Toffler, "The Future as a Way of Life," Horizon, Summer, 1965, Vol. VII, No. 3., p. 109-115.

SOCIAL CHANGES FOR EDUCATION

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It is quite evident that the charge to the sociologist, as the list of questions I have been given to answer is called, could have been written only by an artist, or at the very least, by a non-sociologist. For however much sociologists may strike others as omnisicent, only outrageous hubris bordering on chutzpah, or ingenousness beyond compare, would permit me to presume to address myself to these many different questions. Note please that I am asked to speak of the relevance of social change for education; the validity and value consequences, for both school and society, of contrasting techniques for dealing with diversity in the classroom; with regional and sectional differences in American society as these influence educational content and process; with the significance of various kinds of social differentiation -- sectional and other -- for the fate and fortune of the fine arts and artists; with the variegated means and ways in which elite culture -- whatever that is -- gets diffused throughout this society; with the latest crossed frontiers in sociological theory and methods relevant to the study of the relationship between art and society; and with the reciprocal influences, in general, of school and society.

I suppose one could take such a charge as a challenging kind of flattery and nibble here and there at various of these questions. And I am reasonably sure that before I am done with this paper I will do just that, not because of the flattery or challenge, but because in some crazy sort of way, these questions are connected one with the other.

However, I cannot ignore the fact that an increasingly common complaint about sociologists is that it is getting nearly impossible to have a decent friendly discussion with them because they keep on insisting on defining terms clearly before engaging in discourse. I do not want to be accused of deserting standard sociological norms of conduct, at least not this early in the paper, and so I too find it very necessary to start by pointing to some key definitional problems.

Thus, if one defines education broadly enough -- such as, for example, by calling it the process by which the cultural heritage is transmitted from one generation to the next, then, there are no changes in society, worthy of the name, that do not have to be taken into account by those responsible for deciding what to teach. At the very least, one must consider the possible relevance of the changes for the content and processes of education.

If, however, one defines education much more narrowly, calling it the process by which the new generations are taught basic vocational skills required to enable them to make a living, then it is clear that while some social changes are relevant (e.g., those concerned with occupational tasks and allocation of skills to these tasks,) a substantial if not the vast majority of changes that would otherwise command our attention would not be particularly worthy of being taken into account.

Putting these definitions in opposition in this way reveals that any discussion of what the schools ought and ought not to be looking at and thinking about is not something objectively verifiable -- i.e., the purpose of education is not a hard fact that is evident to any disinterested observer. Rather, any avowed purpose is a form of value commitment or desired goal, and often implicitly calls for a set of means considered effective for and appropriate to the goal, (where effectiveness and appropriateness include, of course, consideration of values lost and gained in the process of moving toward the desired goal in the prescribed ways). Any position that one takes regarding what the schools ought to be doing is in short, a statement of what one wants education to be.

It is well to recognize, right at the outset, this evaluative character of educational purposes so that we recognize in turn that most often in the present public debate about education we are debating policy and not issues of fact. There is nothing at all obvious or self-evident about what schools ought to be doing, however deeply any one of us may be committed to a given program or set of educational goals and however deeply opposed we may be to still other programs.

We want to recognize at the outset, too, that there are at least two different points of possible reference in policy decisions regarding the purposes of education. In the one instance, one tends to focus on a given child and ask what it is that could best happen to him, and what do we wish him to become? In the second instance, one debates educational policy in general, with most frequent reference to something called the "needs of the society," or "the good of the people as a whole," and one tries to formulate certain general guide lines applicable to all students. Clearly, such general guide lines can either be very inflexible and prescribe identical educational processes for all children, or they can be formulated in such a way as to provide a good deal of flexibility and modifiability of program depending on type of child and the given circumstances, but always hedged in by some notion of "what is good for society."

In concrete fact, most of the major schools of thought that one hears advocated in the current national debate on education contain prescriptions for both some common educational experiences for all children, regardless of differences among them, and some special types of experience for different kinds of children. The major policies in contest vary, then, both in how much differentiation they make provisions for, and what it is they prescribe by way of the proper things that should be done with children in school -- curriculum, processes, materials and the like. Think only for a moment of the differences between those who take what is called the elitist position recommending liberal arts and so-called non-utilitarian subjects only for a specially selected crew of the so-called most talented children, as against the position advocated by the so-called populist school which presses hard for classical or liberal arts, non-vocational training for all children, regardless of differences in talent.

I do not personally see how it is possible to discuss what ought to be done in schools without taking into account both aspects of one's view as to what one hopes for our society's institutions, along with a good deal of attention to the unique characteristics of the particular children in front of us about whose educational careers we are making a decision. This is a cliche -- banal -- mundane -- call it what you will. But let me insist anyway that our most grievous arguments -- and often those which are to least avail -- arise precisely because individual parents are primarily focused on the particular and special career-needs and prospects of their individual children, while those in charge of creating and administering educational policy tend necessarily to be concerned with more general ideas as to what education ought to be doing for any child, and on what any child ought to have a chance to experience during his education. Frequently, the latter not only have little to do with the former, but are in direct opposition to them. The educational career needs of a particular child, as his parent perceives them, may have as their overriding aim the preparation of the child for getting the highest possible scores on college entrance examinations, so that his prospects for admission to a prestigious Ivy League school can be maximized. But when schools start focusing their efforts in this direction, given their limited and scarce resources, they often do serious damage not only to the college-board achievements of these college-bound students, but also to their attitudes toward learning, their sense of security in the face of new materials, their feelings about the world of ideas, their basic values regarding their own lives. More than that, schools which respond to the pressure to measure achievement by the percent of their graduates who do get admitted to the so-called best colleges probably do serious injury to the entire school atmosphere, and operate to the detriment of a substantial majority of the students who are not in the most-favored groups.

There is implicit in all these remarks a general proposition to the effect that the public schools have an equal responsibility to all students, regardless not only of differences in race, nationality and religion, but, more importantly, regardless of differences in talent or intelligence or any other factor about them that may be used to predict their likely adult futures. Let me say clearly what I mean by equal responsibility.

Sidney Hook has put it in terms of the requirement of "equality of concern for every child in the community to develop himself as a person with mature powers."[1] He goes on to say, "The normal variation of capacities of children is morally irrelevant to whether they should all enjoy the equality of our communal concern . . . . Recognition of intellectual differences is not anti-democratic unless intelligence becomes the principle of differentiation in a graded, hierarchically organized society . . . . As democrats we believe that every child, not only the one starred for excellence but the one that's not so excellent has the right to be educated to the full reach of his capacities."

Mr. Hook then goes on to point out that as we open the doors of advanced education, i.e., education beyond high school, to increasing percentages of our young people, we still have to take into account their diversity and we can do so by organizing "more than one type of curriculum, diversify the degrees granted, introduce programs leading to special certificates of distinctive merit that will enable students to begin their vocational experience at an earlier age than their differently endowed and more gifted brothers and sisters who must sooner or later prepare themselves for a living, too . . . . Our technological revolution . . . may in the future erode the necessity of earning a living by making the brains of mediocre human being vocationally obsolescent . . . (This) coming obsolescence of all but managerial and inventive functions . . . actually restores to a central place in schooling . . . the ideals of Greek liberal education. These ideals presupposed that freeman are concerned with the pursuit and enjoyment of ends, of consummatory experiences, and not with the means and instrumentalities which were relegated to the provenances of slaves. These ideals presupposed that the vocation of a freeman is active citizenship, not earning a living . . . . In modern society intelligent citizenship, without which democracy is a myth, cannot be exercised where leisure is filled with types of pastimes . . . which are mainly ways of killing time. Intelligent citizenship in a democracy rests ultimately upon the spread of education, because it can serve as a powerful support of political freedom . . . . The issue . . . is fundamentally over the desirability and viability of the democratic way of life. If men are in some way to govern themselves as well as others, whether they do it ill or well depends, among other things, on what they come to know through education about the world, society and themselves."

In these few lines, Mr. Hook has addressed himself implicitly or explicitly to most of the questions that constitute our charge here. Among the major social changes he considers relevant are those defined by the democratization of education, and the accessibility of higher levels to more people than ever before; the automation of work and the rendering obsolescent of the work skills of large numbers of our people; the introduction of undreamed-of amounts of non-work time that must be consumed in some fashion; the increasing recognition of the right and importance of people at all levels of capacity and talent to participate as intelligently as possible in the major and minor decisions regarding their public and private welfare; and bringing into the schools at even higher levels of much greater numbers of much more diverse students than ever before.

Let us add just a few more social changes which are at least implicit in what Mr. Hook has said. There, is first, little question but that a vastly different life is in store for women in our society, bringing them more than ever before into full first-class citizenship and involving ranges of activities far beyond their tending house and raising children.

There is, second, the undeniable growth in the recognized (albeit reluctantly) right of young men and women to make their own decisions and guide their own courses in life at much earlier ages and with much earlier ages and with much greater amplitude of possible choices.

There is, third, the fact that no minority group in America can ever again -- barring extraordinarily disastrous reversals in political ideology -- be expected to accept second and third class citizenship.

There is, fourth, the all-too-evident fact that America has become but one of several major powers in the world and that it is no longer possible to think and act in terms of 19th century power politics and with any sense of confidence that we as a country can do anything we please on the world scene. Some very seriously modified version of our status in the community of nations is in order.

There is, fifth, the fact that the amount of cultural diversity from nation to nation, and continent to continent, constantly diminishes and in ever increasing detail we are becoming citizens of a world culture. Internally to America, this means the reduction and virtual elimination in very short time of any significant regional differences, and of the traditional distinction between rural and urban peoples. Externally it means that any major cultural trend -- educational, artistic, political, religious or whatever, that occurs in any part of the world is soon part and parcel of available knowledge to nearly everyone else in the world who may be interested, and becomes a possible constituent element in the newly emerging world culture. How does one take changes of this scope and variety into account in fashioning and refashioning educational experiences for the children of our country? It is clearly impossible to specify in detail what one would do, for instance, in a class in civics, or algebra that might better suit the ongoing and impending changes than what we are now doing -- assuming anyone really knows what is now being done "on the average" in the 40,000 different and virtually autonomous school districts of the United States.

I am saying in effect that I do not propose here to try to write a curriculum in a series of subjects that would be more adequate than our present curricula. Curriculum development is a complex and technical matter, and by now I have seen enough of how much effort it takes from how many people to re-build even a small section of one semester in one subject not to be cavalier here or anywhere about the curricular task in front of us.

But it is also clear that in addition to the formal content of the curriculum, there are two closely related aspects of the teaching-learning situation to which we can attend here to some degree of satisfaction. First, we can say, in general, what we should like every child to be and become, to the extent possible, as a result of his educational experiences; and second, we can speak of the modes or processes of education that are likely to make anything we teach more effective. And we do have in front of us the mandate of this society -- namely, the provision of equal, quality education to all children.

The achievement of equality in education is intimately dependent on how students relate to the teacher and the two of them to the subject matter. I want to advocate the position that equality at the highest possible level of quality, attuned appropriately to individual differences, can be achieved proportionate to the extent to which we achieve individuation in education. I mean, at first and simply, that schooling is conducted so that every child is known and perceived and considered by his teachers to be a unique individual with fluctuating and varying needs, desires, abilities, motives, interests, and capacities, and his relationship with his teacher and with the substantive and emotional materials that pass between him and that teacher are attuned to the extent possible to this individuality.

Individuation, so considerd, is one of those conditions to which everyone pays lip service, and which everyone affirms as desirable, and which everyone seems most easily and most quickly to forget or ignore when the concrete work of teaching children is begun. There is good reason, for this failure to implement this indispensable condition of sound education. Individuation means hard work for teachers. It means flexibility in administrative regulations. It involves great flexibility in curricular sequences and contents. It requires a kind of empathy and intelligence that many teachers do not possess either by nature, or by training. It involves bridging gulfs of class and caste and religion and ethnic background that are simply too formidable and wearying for most teachers to attempt. It involves community support and provision of resources that most communities simply will not now provide. It necessitates a kind of attitude and approach by principals and other supervisory officers that is far from what many are now inclined toward, and is scarcely suitable to their motive systems, since little public credit and career success are likely to be entailed. And it involves a drastic redoing of school structure and process such that competitive marks are done away with, the notion of semesters and years and steps is eliminated, and schools take equal delight and pleasure in each child doing the best he can, within his limits, and manifest this equal delight and pleasure in the rewards they hand out to children.

As one specifies the obstacles and difficulties in the path toward individuation of education, one sees that we are a million miles away from the chance of full implementation of this condition. But the bare fact is that nothing less than this will suffice if education is to produce the goals we desire.

In considering what it would be like to have a class run on a model of individualized relationships between pupils and teachers, and where competitive marks, and anything resembling semesters or promotion and failure are utterly meaningless, one immediately thinks of the model of a well-run art class. I am not saying art classes are more frequently well run than non-art classes, though one would hope they were. But it is comforting to have such a model because one knows that the desired process is within the reach of teachers and schools -- and that the skills and attitudes involved can be taught to teachers and employed by them meaningfully. In any human affair, where we are thinking about how we can get to a better condition than our present one, the availability of a working model brings comfort regarding the realism of the proposal. Knowing that shifts in perspective and redefinition of goals can bring with them basic changes in attitudes and behavior is most reassuring, especially when the apparent difficulties are so forebodingly great.

One must grant immediately that some of the major intentions of classes in algebra are not the same as those of classes in drawing and painting, and that therefore one has to be careful with using the art class as a model. But we can decide how apt or inept the analogy is only after we come to some agreement about the general goals of education.

I feel confident, however, about speaking of the requirement of individuation, without first considering any specific goal of education other than that of providing every child with an equal and equally appropriate education. And I am impressed not so much with the difficulties -- though they are obviously formidable -- but with the fact that more than thirty-five different devices have been tried over the last two decades in the American school systems, here and there, to deal with the problems of variability of student interests and abilities. H. G. Shane[2] reports that no one can have confidence on the basis of measured outcomes, that any of these thirty-five is in general any better than any of the others, and none yields persistently better outcomes in general than classrooms that are composed literally of children selected at random, without concern for any possible homogeneity among them.

This assessment of various kinds of groupings, trackings, channelings and devices at reducing heterogenity , range and spread among children's interests and abilities, is perhaps the single most important finding about classroom organization that has come out of educational research in recent years. It has the support of research and judgment by equally outstanding specialists such as Harry Passow and Miriam Goldberg of

Teachers College. As Shane says, the problem remains ineffably complicated by such factors as class size, promotion policies, school activities, discipline and reporting, examinations and awards.

Commenting on Shane's findings, Samuel Kirk[3] of the Illinois Institute says, conservatively, "The conclusion one can reach from this discussions is that professional education has not found the perfect plan that would adjust educational programs to all individual differences." Commenting on the same matters, Professor Miriam Goldberg[4] writes, "As we desegregate schools, I think we are making a serious error if we think for much longer in terms of education in the segregated school or the lower class school or the slum school, because, certainly, within our lifetimes, we are going to see mixed schools. This fact alone, I think, will, for the first time, really alert teachers to the fact that they have had wide ranges of abilities in their classes all along that these were masked by certain kinds of apparent homogeneity. The ranges weren't quite so great, the behaviors tended to be more or less comparable, and now for the first time they are going to have youngsters in their classes who don't fit into this pseudo-homogeneity. And I think that perhaps this will be the catalyst to push us into individualizing instruction in a real sense, not through the computer, but through the efforts of organizing a classroom-learning situation in which children with great ranges of ability, children with diverse interests and bents and talent can proceed with their education." She adds: "We have been pretty well burned by attempts at grouping. I think Dr. Kirk made this very clear with his list of 35 plans. We just completed, about a year or so ago, a study on the effects of ability grouping and found that if you just group children by some measure such as IQ, or reading -- it seems to make little difference what academic measure you use -- and then you expect some wonderful things to happen because you have narrowed the ability range in that classroom, you're doomed to disappointment. Nothing happens. From our study we found that the reverse was true, that by and large most of the kids in most subjects did best in the broadest range situations . . . ." Dr. Kirk bears out Dr. Goldberg's assertion about pseudo-homogeneity when he says, "One of the reasons why a simple administrative organization has not solved all of the problems encountered by variability in children is that gifted children or mentally retarded children do not themselves form a homogeneous group."

I take the time to cite these judgments of leading researchers only because, as is so often true of scientific findings, they run so counter to common sense. It is therefore valuable to have the best approximation to the truth in front of us lest we be too easily beguiled by what our so-called common sense tells us.

But there is obviously more involved here than the question of intellectual outcome, or of which administrative organization of the classrooms will produce various kinds of results, as measured by standard cognitive tests. For surely it is an equally important goal of education in a democratic society to provide every child with a chance to achieve maximum self-esteem within the limits of values and conduct deemed desirable and suitable for such a society. And one can bet, with great probability of winning, that putting children into ability groups -- which are known as the smart ones and the dummies -- whatever the euphemism the school employs -- introduces and institutionalizes inequalities that tend highly to correlate with the existing lines of social and economic inequality found in the outside world. Such stratification in the schools functions to convey to the different levels of children unequal senses of self-esteem and promotes in them unequal concern for school success. The principal mechanism at work here, of course, is the self-confirming hypothesis. Teachers who are assigned to the so-called lower ability groups tend to teach such children as though they were dumb, and, in the process, help to make them that way.

One sees that the assignment of children to homogeneous ability groups at the sixth or seventh grade -- which is coming to be the most usual pattern throughout the United States -- achieves just about what the English 11 - plus exams do, namely, to seal off differential life fates for classes of children with little chance of alteration or rectification. For, to be assigned to the lower groups at junior high school level means you have little chance to get into the college curriculum in high school, and if you do not get into this curriculum you have precious little chance of getting into college.

Now, proponents of ability grouping insist their groupings are flexible and that children are moved out and up as soon as possible. But few school systems can claim that as many as ten per cent of the students assigned to the lower groups are moved up or down, out of their groups of original assignement. As a matter of fact, while most schools keep pretty fair records on individual children, few, apparently, bother to cumulate these individual data so that one could really know about trends and tendencies. Moreover, since assignments to ability groupings are made on the basis of subject grades, and/or intelligence tests, and/or ability tests, and/or teachers judgments, and since these tests and judgments are notoriously fallible, and in any event are use properly only to establish *group* norms and *not to evaluate* individuals, one wonders how such literal perfection can be achieved -- as evidenced by the minimal number of changes made later -- if the self-confirming hypothesis isn't working overtime. Add to this the fact that it is the rare school system in which teaching the so-called fast kids isn't considered by all the staff as most prestigious, and more rewarding, and by comparison, teaching the slower kids (except of course for the crippled, blind, deaf, dumb and idiotic), isn't considered degrading and dishonorable. If we tried hard to invent a method that would stratify our children population rigidly and effectively and with near permanence, we couldn't have done better than we seem to have done accidentally with homogeneous groups, on which we stumbled, ironically, in our search for ways of taking diversity more effectively into account.

The ordinary response to this critique of heterogeneous grouping argues that after all the schools must be realistic and that if the children are going to have different fates in life when they go out into the outside world, and if they are going to be involved in economic and social competition there, they had better be trained for it in the schools. But this argument is patently absurd on two counts. In the first instance, we do not approve in our ideal norms of the existence of stratified classes with significant differences in life chances and styles. If we recognize that such classes exist, we tend to minimize their significance by insisting they are only temporary. Or we point to the so-called welfare measures which presumably operate to reduce the market inequalities. Or we modify our ideological stands and say that when we speak of equality we only mean equality of opportunity and not of situation. In any event, since in general we do not approve of socio-economic classes, it hardly makes sense to talk of how important it is that the schools should prepare children for life in a stratified society.

The second group on which I believe the critique of heterogeneous grouping is absurd is contained in the notion of *preparing* children for life. Here the error arises from failing to distinguish between "teaching about" things and "rehearsing for" things. Surely the schools must teach realistically, in the sense that they must help children to a deeper and fuller understanding at all times of the nature of social reality. And this social reality includes such things as wars, famines, unemployment, prostitution, drug addiction, crime, treason and revolution. But we surely don't mean to *rehearse* our children for participation in these activities -- at least not for all of them, however much we want them to *know about* and *understand* why and how these phenomena occur. So we want to *teach about*, but not rehearse for, the social realities, including the absurd and unequal struggle for income and status, whose junior counterpart is the homogeneous ability grouping system.

In sum, if homogeneous grouping does not yield intellectual outcomes superior in general to heterogeneous grouping, and if the by-product of such homogeneous grouping is the early institutionalization of undesirable forms of social stratification, with concomitant losses of self esteem and educational motivation on the part of those denigrated, and if the maintenance of such groupings requires competitive struggles that are disfunctional both for decent pluralist living and for personal development, there seems to be little social or educational reason to advocate that we group our kids off from each other. The main positive functions of homogeneous grouping as far as anyone can tell are the ease and comfort of the teachers. I don't mean to minimize this value. And one can hardly blame teachers in overcrowded and minimal-resource schools for desiring homogeneous grouping -- especially those teachers who are likely to get the students they think most fun and easiest to teach. But however understandable teacher impulses toward comfort may be, they have nothing necessarily to do with what we consider sound and effective educational policy. Just let us be sure that when we develop programs aimed at more effective education we don't make already overburdened and under-talented teachers take on the major burden of the changes. It is not only that this would be unfair, but more importantly, it will guarantee the doom of the new educational plans.

Reductions in teacher burden and increases in teacher competence are obviously indispensable to the possibility of any effective change in directions considered desirable -- summed up in the term individualization of education for effective equality of education.

We have proceeded so far with only minimal specification of the goals of education we consider desirable. Our main point of reference has been "education for life in a democratic society" and, in consonance with and pursuit of this end we have stressed the importance of equal and equally appropriate education, which in turn requires individualization of relations among students, teachers and curriculum. We are implicitly arguing here that the best possible teaching about and preparation for effective citizenship is the modeling of such relationships in the school. If sound democratic institutions require, as many have argued, a sense of the equal importance by each citizen of his place and role in society, then the schools can do much toward operating so as to yield this sense to all their students, remembering at all times that unequal talent and competence must under no circumstances be the basis for differential esteem and reward.

But now we have to ask what it is we want every child to be and to learn about and to learn to feel and to learn to do while he is in school.

Because this conference is nominally focused around the interests of persons primarily concerned with art experiences for children in the schools, I will not try to consider what a well rounded curriculum might be like, and where in that curriculum art experiences would fit. Nor does it seem to me particularly useful to recite the difficulties traditionally and chronically experienced by art teachers in securing for their discipline a legitimate first-class citizenship in the school offerings, except as these difficulties reflect certain deep lying antipathies and suspicions of art, artists and art education that seen endemic in the American public. Rather I should like to turn my attention to what I consider to be the core of experiences that children can have in a prolonged exposure to good art teachers; what the relationship of these experiences may be to effective citizenship in a democratic society; how difficult it has proven to be to demonstrate the value of these experiences to those who allocate the school's scarce time and resources to various subjects; and some of the ways in which research programs might effectively yield information about the impact of art experiences that might be more persuasive on the decisions made by school authorities regarding the role of art in their schools.

The one thing I am not going to do, except by circumlocution inference and indirection, is to try to define what I mean by art experience. After all, about two years ago I sat through a series of six gorgeous lectures by Harold Rosenberg during which he never once answered the question what is art, nor even would he say what he liked and didn't like. Most of you will have also read the essence of those lectures in a series of articles Mr. Rosenberg did in the New Yorker about two years ago and you will be able to certify for yourself that what I have just said is true. I will venture -- maybe injudiciously -- to say that in general when I speak of art -- confining myself now to visual art -- I mean these objects, canvasses, machines, bulks, figures and what nots -- which one can see in the museums and galleries throughout the country, and about which such critics as Harold Rosenberg and Hilton Kramer and Clement Greenberg and Meyer Schapiro and other less venturesome people write in their columns or books or speak about in their lectures.

Actually there is little point in even considering the quality of the products of so-called artistic effort or of deciding among them on some criterion of virtue. For my real interest, and it seems to me the real concern of education, is not whether such products are forthcoming from students, but whether their minds and hearts are being engaged in particular ways.

I will try to move in on what I mean by saying I have three kinds of things in mind, that can be taken to be, in my judgment, the proper goals of art education.

The first has to do with the development of the student's sense of himself; the degree to which he becomes increasingly aware of, concerned about, interested in, and determined to achieve an increasingly satisfying self-definition and identity. I am not at all relativistic about this. I do not mean that any identity or self-definition will do as well as any other. I do mean that the definition has to be made up of healthy doses of autonomy, and awareness of its possibilities and limits; of an inner compulsion to be honest with oneself and with others, and a knowledge of the varying tolerances and consequences of this honesty; of a pressing need to expand one's powers and one's relatedness to the world of objects and humans, and a delicate sensitivity to the dangers and promises of this kind of adventuresomeness; and of a fundamental sympathy for the integrity of the identity of other beings and objects, with a balancing measure that prevents this sympathy from becoming sentimentality.

The second thing one wants to happen to children as they grow is that their minds and their tastes shall grow apace. They must come to know more, understand more, see more relations among heretofore apparently unconnected things, see more differences among heretofore apparently identical objects and beings. They must come to know the fine from the mereticious; and this they can know only as they come to understand what it is that those who specialize in expressing their visions with skill and honest and imaginativeness are in fact trying to do or say, or the way in which they have come to be interested in looking at the world. Knowledge, wisdom, sensibility and taste: these are the ingredients of the second thing one wants children to acquire.

The third achievement one wants has to do with openness of the mind and the soul. One wants new ideas to be as exciting as are old ideas reassuring, and new styles as interesting as are old styles familiar and comfortable; and new relationships to be as challenging as are old relationships security-inducing. One desires, in short, that new things shall neither be embraced nor rejected just because they are new, but rather one seeks a certain receptivity to and interest in the possibilities that one's life may be enriched or one's culture may be enhanced by the new idea, vision, slant, conception or statement of relationship.

One can not yet measure these things in any quantifiably precise way; there are no satisfactory paper and pencil tests, or projective tests, nor any standard set of observational procedures by which these kinds of developments in young men and women can be recorded reliably and validly. I do know, however, that all of us here know what I am talking about; that we use these terms to measure ourselves and others; that we discriminate among other human beings on the basis of the extent to which they manifest these characteristics; that we take pleasure when we see these things happening to our children; that we are saddened by their absence, or by the presence, instead in the children of trite, clinched, banal, instrumental, salesman like, ingratiating behavior. So I am not talking about something that is mean, low, inconsequential and made up mostly of hot air.

The whole point of individuating education, if you will, of caring about whether every child gets an equally appropriate and suitable education, is precisely so that he will have a chance, better than he otherwise would have, to reach somewhat closer to becoming and being the kind of person I have so awkwardly and inadequately tried to describe above.

It would be feckless to query whether I mean that the development of such a person should be the charge uniquely or mainly of the art educator and should be looked for as a reasonably possible achievement within the framework of the art classroom. I do mean to imply, however, that in some ways one has to view the school in general as the one major possible resource for the development of some sense of the kind of life one can live when one is growing in the three major dimensions specified above, while virtually all other institutional forces in the society to which the youngster is attracted and necessarily is related and even dependent upon tend more rather than less to push him in opposite directions. I do not say the schools now accomplish this countervailing task. I do say, however, that of all our public resources the school is the one most amenable to this job. And within the school -- now to differentiate opposing tendencies therein -- it seems to me the art class is the major resource relative to the rest of the curricular exposures, just as the school, in toto, is the main hope relative to the rest of the institutional exposures, one expects for children in the family, church, peer group, market place, government, and mass media.

I ought to add immediately, too, that while the art class, the good one, has the best chance of being the kind of place where these kinds of developments in children are nurtured, it would not take much of a change to structure the so-called major subjects -- of math, physics, history, social science, and literature so that they too become occasions when the process of education becomes the process of growth in healthy identity, deeping of knowledge, wisdom, taste and sensibility, and refreshment in the value of openness to new experience.

Fortunately, at least *some* of the new curricular proposals which I have seen in a variety of subjects have come increasingly to stress education as a process and a relationship between child and teacher and subject matter, rather than more narrowly in terms of a certain set of curricular outcomes measurable by standard tests of cognitive functioning. Unfortunately, on the other hand, *most* of the curricular proposals I have seen don't show the slightest awareness of the possibilities inherent in conceiving of education as a relationship among child, teacher and subject matter, and one whose value is ultimately to be measured by what happens to the child.

One has to understand sociologically why it is that much of American education -- which is in any event superior by almost any criterion to education in any other country in the world -- fails so miserably to live up to its great inherent possibilities. The major reasons are also the most obvious.

There is first the fact of the political control of the school by local Boards of Education who usually have no good reason to care seriously about the kinds of developments I have been trying to sketch.

There is, second, the fact that these Boards of Education are pretty representative samples of community opinion throughout America about the important and unimportant things in life.

There is, third, the constant pressure, even on parents who know and want other things for themselves and their children than the hash they get served up most usually, to fall into line with the parade to prestigious academic success and advanced education, or into the other line of learning some basic fundamentals, whatever those are, before one leaves school after the 10th or 11th or 12th grade, and getting onto one's paying job as soon as possible. Both these lines are eminently practical by most standards and it is practical results that are most wanter. There is little room in either of these lines and the things that define them for the kinds of concerns about identity, wisdom, taste, sensibility and openness of which we have been speaking. If one can get the latter *along* with good college board exam grades, or along with a good job placement, all well and good. But it just wouldn't make good practical sense to try to replace the "practical" goals with these accessories and trimmings in the curriculum, nor of course, to change the curriculum so that the major subjects became the occasions for the impractical to be achieved.

It would look as though all the tides and currents were running against the implementation of the goals of education I have here specified. But I think there are some things from which we can take some comfort too.

There is, for instance, the increasing insistence on the part of the young men and women of this society that they be allowed to make decisions regarding their own fates and futures of a much more consequential kind and at a much earlier age than has been true for some generations now. The college campus protests and the teachings are evidence of this new freedom operating in at last partly valuable ways; the madnesses such as at Daytona Beach are examples of how to waste freedom foolishly and to exercise independence stupidly.

There is, second, the increasing dissatisfaction, anxiety and despair of parents as they come to experience the full impact of the system of competitive grading, within a framework of traditional teaching, and where the major goal is admission to a so-called good college for their children. As about fifty per cent of high school graduates seek admission to institutions of so-called higher learning, the despair and dissatisfaction of parents with existing institutions is likely to increase. Of course it is eminently likely that all that will be called for are more and bigger institutions of so-called higher learning, in which case nothing good will result. But at the moment at least the despair has some possibilities of finding expression in a shift in attitude toward the meaning and purpose of education.

There is, third, the incipience of fashionability for so-called elite culture or high culture or the fine arts, arising at least partly out of new affluence and the need to consume this affluence modishly. This too can lead to nothing more than mutual exploitation of cheap artist and cheap patron; but at the moment at least there is some chance that a serious interest in art and art as experience may develop among at least some segments of the population who heretofore have been totally alien to it.

There is, fourth, -- and I have had direct experience of this -- a growing revulsion, among persons concerned with the measurement of educational process, functions and outcomes, for the limited kinds of things that form the major part of educational measurement at the moment. There is a great ennui with measurement of traditional cognitive achievements. Traditional testing is under serious scrutiny. There is talk in the air of developing a better understanding of the meaning of creativity, or of cognitive and styles far different than those recorded on college board exams, and of human relationships and behavior relevant to good citizenship, and of measurement of commitment and alienation. In both the educational and social science research community, newer and broader visions of that is important to think about, and care about, and work on are emerging. These still constitute an avant garde, but by no means so out and so easily sneered at as was true yesterday. It is strange that these new currents should start to move just when hard headed empiricism is really beginning to feel its strength because of its gains in precision and the worlds opened to it by the emergence of computers. But such is the case.

These are but some of the encouraging and half-encouraging aspects of the present situation. How they match, balance or compensate for the discouraging and disillusioning features of the present situation depends on one's temperament. One can say, however, that there is every good prospect that there will be increasing interest by the research community and by the sponsoring private and public foundations in the conceptualization and measurement of the kinds of educational outcomes we have been speaking of here, and in the educational processes and community structures that have most promise of yielding the highest quotient of such outcomes.

I am suggesting, too, that the new research trends and the new interests in the professional educational and social science community may be a main source of change in the actual conduct of education itself. Thus, the effort of the Pennsylvania State Board of Education to propagate and to get adequate measures of what it calls quality education in the state of Pennsylvania has a high promise of leading to some basic revisions in the conduct of education throughout the state. It is heartening that prominent lay persons are giving solid and consistent support to a new vision of education as contained in the Pennsylvania definition of quality education. It is just as heartening that the Carnegie Foundation, and the Ford and the Rockefeller Foundations, and the Office of Education of Health, Education and Welfare, are all interested to a very gratifying degree in the possibility of developing a national set of standards of quality education, the definition and contents of which are far more toward the kinds of goals we here envision as desirable than anything that has appeared on the American scene in three decades.

One suspects that the cultural pressures toward banalization of education and its final corruption in total instrumentalization, may be far from irresistible. One begins to see this culture as more open in its possibilities than its present major themes seem to suggest. And the openness of the possibilities seem to be greater in the field of education than in any other institution -- be it religion, or family, or government. This is partly because in some basic way Americans don't take education very seriously, however much they insist that it is the sine qua non of a good society. Among those who do take education seriously, there are encouragingly large numbers who have come to think of education as a process in the general ways described here, yielding outcomes in student perspectives, powers and promises of the kinds we have suggested.

It is, of course, of the highest urgency that we make serious efforts to discover what kinds of relationships will yield what kinds of outcomes, and what these efforts be translated into terms susceptible to measurement and communication to the non-specialist and to the unconvinced. It just won't pay to sing the praises of creativity to hard-nosed members of boards of education who couldn't care less. It will pay to be able to demonstrate outcomes of lives that are more and less creative so that unbelievers and men who pride themselves on being practical can see for themselves whether all this new frilly stuff is worth the effort and the expense. It may be of course that the data will not support the claims inherent here. It may very well be the case that neither in this society, nor in any we can conceive for the proximate future, is the aim of full, meaningful, adventurous and committed lives likely to be able to be embraced by more than a small percent of the population. But it seems to me eminently worthy to make the effort to put these things in measurable terms so that we can see more clearly for ourselves than we have ever been able to before whether the ideal of a whole population aiming at highest levels of alert citizenship is really within reach.

EXCERPTS FROM THE DISCUSSION WITH MR. TUMIN

Audience: Would you care to elaborate on that topic of teaching children to see?

Mr. Tumin: I have no skills in teaching children how to see. I can give personal testimony to having never been taught how to see nor to hear, and so to having remained deaf and blind so far as the world of music and the visual objects is concerned until partial sight and partial hearing were restored by very good mentors and tutors at a very advanced age; and I curse my childhood for that. I see the same thing happening to my kids who having reached high school have to put aside art. They get one or two periods a week and forget about the business of seeing or hearing. They have got to learn everything else. You know the house booms with music and there are paintings all around. One of the kids walks around as though there was nothing on the walls and no sounds coming out because he has four hours of homework each night that he has to do. He has got to figure out set theory tonight. I thoroughly subscribe to the terribly great importance of teaching children how to see and hear from the very earliest moment because all our cliches happen to be true. Kids are open at the beginning and stay open until you close them down. Unavoidably we close down some functions of a young person. Nobody can keep everything open. We don't have to close down as much hearing and seeing as we do close. I'd rather keep seeing and hearing open and let some other things close down that we now try to develop.

Audience: What is the meaning of autonomy in the corporate world today?

Mr. Tumin: When you talk about autonomy in the corporate world in which you are an interchangeable unit, you burlesque the structure of the corporation because of it. Large scale organizations are not necessarily inherently destructive of individual freedom. Most of our lives for most of us are going to be lived within the framework of large-scale social institutions in the perceivable future. Large government, large-scale schools, universities, churches, armies, etc. It seems to me it is imminently possible, as any number of industrial psychologists and sociologists have suggested, of devising ways in which to run large-scale organizations in which there is a good deal more participation by individuals at every level in decisions relevant to their own participation, and where decisions relevant to the organizations are made. Some identification with the enterprise may thereby be achieved that otherwise wouldn't be able to be achieved and some measure of a sense of control over one's fate is achieved that otherwise couldn't be achieved. As Sidney Hook even envisions further in the article from which I quoted, one looks forward to the day when, in effect, our real problem will not be how to organize work but how to organize leisure, for work time will be down to a virtual minimum. We may put in our ten to twelve hours thinking into whatever machines we happen to be managing or be managed by and the rest of the time will become a time of constructing significant meaningful use of one's non-work time. Do not despair at the possibilities of freedom in large-scale society so long as one--to put it in homey folksy terms--so long as one maintains a certain fundamental kind of respect for the rights of others and as much for them as one's self. To be sociologically realistic there are structures of government in large-scale organizations that tend to develop in such a way that freedom gets restricted terribly; but not necessarily or inherently so.

Audience: In the earlier part of your paper you suggested that we must suspend our private passions in order to improve public policy. In the latter part of the paper you mention boards of education and the influence of the majority opinion. It seemed as if the majority opinion was somewhat negative whereas public policy was positive.

Mr. Tumin: I referred to examples of bad majority opinion. When I talk about suspending or changing of public policy, I mean for good public policy. When I said boards of education are enemies I am talking about the boards of education which support things which I don't think are desirable; and I refer to majorities who make decisions which I don't think are desirable. We are then not arguing the importance of the acting out one's private passions, because that is never acceptable, but rather of acting out and taking steps to advocate and to implement one's own beliefs about an alternative public policy.

Audience: That's not a private passion, then?

Mr. Tumin: Well, I have the passion to act well publicly, if you want to put it that way.

Audience: In large high schools, urban high schools, in highly populated areas, we often find the lower-class youngsters are likely to take craft classes; the middle class youngsters will take art classes. In your concept of appropriate patterns of education, does this mean that we want to provide vocational-oriented art classes for the lower-class children and humanistic or liberal arts-oriented art classes for the middle-class youngsters?

Mr. Tumin: I would hope not. I would hope we would not be mutually exclusive. I have to talk in utopian terms. One hopes the public schools for the first eight years have not already pushed them into grooves that you can't rescue them from. We must assume that they come to us equally; but they have obviously different vocation careers and school careers ahead, that half are going to quit after the third year of high school and the rest are going on to college or something of the sort. I would hope there would be some sensitivity to their vocational needs, but I would hope that that which comes out of the teaching of art would not be subverted in the interest of vocational craft skill unless one can devise (and this requires the ingenuity of superb educators) means to make vocational skills combine with the kinds of relationships to objects, to the making of things, and to the involvement of one's self so that one gets essentially the same outcomes for kids at all different levels of vocational interests even if the curriculum happens to be very different. I think you all probably know some ways of securing the same kind of outcome about a sense of mastery, sense of commitment, control over materials and growth in the process that you get from working with poetry, or by working with painting or working with sculpture. I would hope this is not impossible, at least I do not see any principal grounds on which it would not be possible. I don't mean to say that any object will do as well as any other but I do mean that there is a common process of relationship between kids and their enterprises and teachers in that relationship which yields the same consequence almost regardless of what the object happens to be. This is as long as the relationship is made of sufficient interest to sustain motivation and induce commitment. If at the same time you get vocational training as a secondary consequence coming out of it, that's fine; but if it is primarily vocational or vocation-orientated, then I think it is wrong.

Audience: Would you differentiate between work and leisure?

Mr. Tumin: The distinction I was making before is a crude one between that which you have to do to make a living and the time that you have free from what you have to do to make a living. I think I know the kind of question you are asking. One would hope one would have in his work the same kinds of qualities of enjoyment, participation and involvement that one gets as one looks to his leisure and luxuries for. I'm not sure this is possible. I think it is a dream. Very few people are blessed by having the kind of job where there can be a real intrinsic satisfaction in the relationship between them and the job. Most jobs are pretty cruddy and they always have been.

Audience: How about private life? Isn't that pretty cruddy, too?

Mr. Tumin: You see, you have some more control over private life than you do over vocational life.

Audience: I completely disagree with that. I think that the whole idea of the work situation being worse and the idea of escape into private life is completely distorted. The fact is that people who are interested in their work in offices often have a much richer life there than they do when they get home.

Mr. Tumin: This doesn't disagree with me at all. What you are saying is that people don't use their private lives in the way that they could use them.

Audience: That's quite true, but I think your answer to it is not a good one because the possibility of turning the work situation into a higher form of activity is much greater than the possibility of expanding the private life into some kind of--

Mr. Tumin: Oh, come now! First of all if things go in any way that has been predicted--

Audience: There won't be any work.

Mr. Tumin: All right. In the transitional phase there will be increasing automation of work, and except for a small percentage of the work force, there will be increasing mechanization of work, with an increasing dearth of the kinds of satisfaction and social relations that a number of men find at work now. I don't think we can look toward work then--

Audience: I think you have to look towards other kinds of public situations. For example, right now take a man who has retired from the head of a company. Immediately he is caught up in philanthropic activity work or for the United States Government or some other public activity increases and he works three times as hard as he did when he was chairman of the board. Keep in mind, that the diminution of work can very well result in an expansion of public life rather than one going back quietly to private life.

Mr. Tumin: Of course, you know you haven't begun to explore the possibilities of what I call one's private life. I meant non-work life. One of the possibilities is the intensification of pleasures and personal relationships on intimate scales with one's spouse. But you are absolutely right that one of the major avenues of possible exploration are the new forms of public activity that can be generated in non-work time which will yield larger quotients of satisfaction for everybody involved than they have ever had before.

Audience: Now I agree with you. The reason I raised the point is that there seems to have developed a kind of dichotomy between public and private, public being the life of work and private being the life of leisure.

Audience: You set some goals or standards, which might be considered. I would like to know what you feel is the critical task of growth in individuation. What would lead us to recognize signs of achieving this desired goal, as we see it in our students?

Mr. Tumin: Let me alter the language of the question if I may. I don't see individuation as a goal except as one takes the achievement of new processes as goals in education. I think of this as the process of relationship that leads to outcomes. Now, you are asking, "How can we discover in some communicable and measurable way the extent to which we are really implementing this desired process more than we have done in the past?" Is that what you are asking--the extent to which we achieve the goals the process leads to?

Audience: I desire suggestions of how we might take steps, how someone might take steps to achieve better ideas as to how to go about meeting this problem and making maximum use of himself. You said no matter whether we can measure it now or not, we can sense it. Now I would like to know what steps we can take so that we can translate what er can sense into measurement?

Mr. Tumin: Well I can give you a rather general programatic resolution, but the details are very laborious and are in a developmental stage. If one assumes a proper, sufficiently small ratio of teacher to pupil, then the first thing we need to do--and can begin to do because we have at least some rough conceptualization of this thing-- is to take an inventory of responses over a period of time without ever saying these are the child's limits and he is not living up to them. Living up to one's capacity is a bad notion because capacities change from day to day. Take an inventory of the sectors of involvement of the child at the moment and the sectors of his apparent talents and abilities and other things in which you are interested. Take an inventory of those over time (and this can be done by teachers who have a small enough number of children). It can be done in, at least, some qualified measurable units. We could keep a running diary as one emerges from every relationship with the child on whichever sectors one is related to, whatever their particular task happens to be. I am speaking here in most general terms, but I can tell you that this is not psychometrically impossible, that it is beginning to be done. The Commonwealth of Pennsylvania is taking the lead in the United States in the beginnings of the measurement of certain personal growth in children over time, though it is in a very crude stage at the moment. It is further than anybody wlse has ever gone. We have at least some indirect indices of such things as,..... emotional courage. We have indirect indices of spontaneity. We have indirect indices of degree of commitment and loss of self-consciousness. We have indirect indices of the extent to which the child is involved in discovery, of objects as well as himself. As I say, indirect indices, I think in terms of concepts that one would have to struggle through to try to put them into measurable form. But they are within our intellectual grasp even though they are not within our machine instrumentation at eht moment. So the process is that of getting a sufficiently small ratio of teacher to pupil with good teachers, sensitive to these things, trained and alerted to these possibilities, concerned with the development of each child. These are indispensable prerequisites of going on, caring about each child's development equally, and knowing how to recognize with professional guidance the marks of moment along dimensions that are considered desirable directions in which the child can move.

Now you can say that's a lot of words and air; and yes, it is words and air just as it was words and air to talk fifty years ago about unleashing enormous amounts of power in the universe that we ultimately came to control. It was words and air fifty years ago to talk about educating beyond the twelfth year anybody but the brightest of kids, and we are now educating, sending on beyond the twelfth year 50 per cent of our high school graduates. This is superb. Only if you think in terms of they are not college material, which is an absolute wrong and stupid way to think, can you deplore that tendency because who cares whether they are college material. Who is to say what is college material? Nobody is ever well enough educated. Everybody can be educated all his life in one way or another. To say then that it is proper to stop educating people at the twelfth year is insane. The things that fifty years ago seemed to be out of our grasp are coming within our grasp, and these things to which we are beginning to turn to only now come increasingly within our grasp. I am expressing hopes, desires, ambitions and fond dreams but they are not totally unrealistic. I do want to measure them and I think it is important to measure them; and I don't think you kill the spirit by trying to measure them. Measurement does not involve pulling up the roots to see if they are growing. Measurement is the application of external instruments to certain aspects of a process, abstracting certain elements in which you are concerned, to get the best possible intellectual grasp of the situation that may or may not support your own particular feelings about it. People who throw up their hands about measurement are throwing up their hands about a "bogyman" that doesn't exist. It is only when you substitute measurement for sensibility, when you measure useless and meaningless things as against not measuring anything that measurement becomes nonsense. There is nothing inherently destructive about measurement at all. The eye is not quicker than the calipers. When you talk about "most of the time" you are using numerical terms when you are talking about "many people" you are using a numerical term, and when you say "often" you use a numerical term. These are all measurement terms of a kind but it is sloppy measurement. It is better not to casually say "most of the time". You better know whether it is "most of the time" because often enough when you believe it is "most of the time" it is not "most of the time". Just take as an example thinking about homogeneous grouping. It makes perfectly good sense to believe that homogeneous grouping should be better for everybody concerned. After all, let's educate kids at their own level. The common sense appeal of homogeneous grouping seems perfect; but when you look at the data which is finally coming in, it just doesn't hold up to the common sense version at all. It just runs against it.

Audience: I have a point to make here, and I think it is a valid point. I would like to try to order it; namely, where you have a subject matter which is highly systematized, and I think mathematics is an example, the necessity for restricting entrance into that course in terms of students having taken previous courses which precede it are greater than in the social studies as they are typically taught or in art for example which can tolerate typically a greater range of variability than subject matters like mathematics and some of the sciences.

Mr. Tumin: I won't fight you on that, but I will say it is irrelevant because no one would argue with you that every kid in school should go on to trigonometry as it is now taught, assuming trigonometry is worth teaching, or go on to advanced calculus or to high algebra or take a fifth year of French. We talk about the appropriateness of different kinds of education for kids so long as they were equally appropriate to all the kids. How does that mean that you are going to get some kids of a very special talent going into special subjects at certain reaches of higher levels of secondary school system? Yes, as things are presently constituted; and maybe they ought to do this, if you think primarily of high school as pre-professional training. I can conceive of a high school curriculum where there wouldn't be a bit of that pre-professional training which, I think, we could all dream up to serve our educational dreams and goals far better than we are now doing by using high school primarily to prepare kids for college. When we turn our high schools primarily into talent hunts for the best kids so that colleges can come and cream the bodies off, then I think we desert the major educational purposes for which the secondary schools were intended, or that I would like to see them intended for. You see, I really think it relies on what you do wish to do with those twelve years. If you are going to teach trigonometry there are always some kids who are interested and will be capable of trigonometry, but there are things about numbers in the world of concepts of numbers that all kids can study for twelve years. Granted that some youngsters will learn in twelve years only what others learn in three years. There is no problem so long as you don't think of what a high school diploma means. What you do is give a school-leaving certificate. You say he has sat here twelve years and pursued the following courses of study. If an employer wants to know if he can do a given job, let him find out; and if the colleges want to know if he is capable, let the college give him a test. I think when we make the schools primarily oriented toward that kind of placement them that's when the kind of problem you raise becomes extremely serious; and I would join with you in concern, given the present structure, for how do we sort out and do right by bright kids, dull kids, medium kids--given these different goals. I would join you, but I think it depends on a very special consequence of what the secondary schools are intended for. Would you agree with that?

Audience: It is not relevant to the point I was trying to make. The point that I was trying to make was that the nature of subject matter that is being taught sets certain requirements with respect to entrance to the programs where that subject matter is taught no matter what the aims of the school happen to be, whether it is college preparatory, vocational training, liberal education or what not. The nature of the subject matter and the quality of the language used, the nature of the concepts employed determine something about who should get into such programs.

Mr. Tumin: Wouldn't you agree that the nature of the subject matter you are going to teach depends upon your concept of what the school ought to be teaching; so the remarks were relevant in the sense that we are really here dealing with a problem which especially arises out of a very special context of schools as presently constituted and conceived. We might minimize such problems considerably by drastically envisioning the notion of what secondary school education is about and let's change the subject matters that we teach. I would even advocate doing it up through sixteen years. If you want professional training after that, that's another fight.

I would like us to, if possible, refer to the essential problem which we have here which is the specific function of art in the schools. You have taken enough pot shots at me, now I'm back at you. I am deeply concerned about developing this point further. How can we explain, perhaps measure, such goals as the three you suggested for developing students sensitivity. How we shall dwell on his tastes and his openness of mind. It is very difficult to measure openness of minds, spontaneity, growth, unless we know what our standards are and even if we intuit what those are we need a good deal more discussion of how these might be put into operation.

Audience: What is being done in measurement development and could you elaborate some on the problems of standards?

Mr. Tumin: With regard to the measurement problem, we now are developing some fairly crude instruments, but they are better than they were before. These are instruments for getting kids' self-estimates, their own vision of themselves, their own sense of their powers, their sense of their relatedness, the sense of the extent to which they are liked, the reasons they want to be liked, the people whom they want to be liked by, the extent to which they feel their qualities are appreciated and which qualities are appreciated. Let me introduce to you then the question of standards. I don't propose to set standards to what they ought ot want to be liked for. We can in the beginning at least secure enough agreement as to the range of things which the variety of us are interested in as marking important things in kids and marking levels of these developments. They are, as I said, crudely subject to some kind of estimate now. Openness is also crudely subject to estimate now. There are a variety of instruments about the extent to which persons choose security systems to new experience, venture or retreat to safety, novelty as against tradition and familiarity-- all these are just surface things but they begin to touch. Measurement of taste is almost non-existent at the moment. We have some measures of cognitive development, and they are coming along. I am optimistic about the possibilities here as we go along; so I think the measurement problem is within our grasp, I would repeat, our approximate grasp, our future grasp. The next problem is the specification of that which art educators believe are the dimensions of the experience in the art class which are relevant to these desired educational goals. That requires a whole series of working conversations between art educators and measurement people. Not only, conferences, but observations to say that this is what you are referring to when you talk about what this teacher is doing. Is this the kind of ingredient you specify? Then we try to get conceptualization of that. For instance, we may say that one of the things the art class does is that it contributes to openness in that the teacher never puts negative sanctions on work done in terms of saying :bad". Now that I can conceptualize. That is the absence of negative sanctions and that can be counted. Now surely that is one of theingredients that I see in the art class that makes a big difference. We can count that and determine its frequency in the art classes. In other classes, we can ask what do we expect this week? Do we expect that kids will turn to their tasks with as much commitment as they had before--another measurement problem. How many children become demotivated, that's another measurement problem. These are three measurement problems. If you start to think in these terms in the collaboration between the artist who is not saying what is being measured but saying this is what we are after and if we exchange enough conversation we may get at least an approximation of the unit that we are talking about. You have to be satisfied that you are not grasping the whole experience because otherwise you get in that shaggy dog approach where a person says that dog isn't shaggy enough. You have to be satisfied by getting a piece of what you are after, if you are going to do scientific measurement of so-called qualitative variables. If you are not satisfied with that, if you say you are really bastardizing the art experience, that you are not really capturing its essence, then you are going to have to keep on fighting in the same old way. I think that alternative is despairful. I do think we resonate on the same things; we care about the same things; and I fo think they are capable of being measured.

SOCIETY, ART, AND EDUCATION

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The purpose of this paper is to stimulate further inquiry into the relationships between society, art, and education for possible directives for curriculum development in art. Identifying relationships among fields as complex as contemporary society, the broad aspects of the visual arts, and present day education is a nebulous undertaking. The materials that follow are based upon one individual's selection and analysis from the research and study that are available, and can only be presented to you within this qualifying framework.

Most of us would agree, I think, that this country is in a period of intense social change. Increased consciousness of minority groups and their emergence are challenging stereotypes and prejudice. Automation and population increase are affecting our concepts of leisure and of work. Social organization and human behavior are affected by the increase of megapolis and changes in urban and rural environs. World problems, with the accelerating speed of communication and transportation, become community problems. Art educators' individual reactions to change probably run the gamut of those found among diverse groups in the larger society. We may be retreating from the changes by refusing to recognize them, or we may be trying to solve the conflicts they present with old solutions to old problems. Others of us may be overwhelmed into inaction by the complexities presented, or isolate ourselves by believing that our area of education or profession is not involved, that social problems belong to political scientists and sociologists but certainly not to individuals in the arts.

Our reaction depends in part on our concepts of the nature of art and its relationship to humanity. We cannot begin to explore the relationships between art and society without assessing our basic assumptions about art, for these assumptions condition our inquiry.

If we believe that art is to be produced and enjoyed only by an aesthetic and intellectual elite or subculture of our total society, then we might have reason for believing in social isolation of the arts. If, on the other hand, we consider art as a phenomenon of human behavior to be found wherever form, line, color are used to create symbols for communication and to qualitatively change the nature of experience, then art is related in some degree to all of society. If we accept this definition we, as art educators, become involved in problems of society and social change; we recognize art as one of the major communication systems of social interaction and of society in transition.

Definitions

The word art is often used to both denote and to qualify. We compare two objects by saying one is, but the other is not, art, when in actuality they may have many characteristics in common. Cultural anthropologists tend to identify most examples of visual symbolism and embellishment as art. This is a denoting, identifying function and does not necessarily make a value judgment about the quality of the art form. Much of commercial illustration is often derided as "non-art," yet form, line, color, and texture are used in some kind of composition or design to express ideas, conditions, or feelings. In our so-called "popular culture" we find myriad examples, where the elements and principles of art are used. The anthropologist would identify them as art. Further, the like-dislike behavior of a large majority of our students is learned within the context of the art in popular culture. As educators, we need a better structure of our terminology, so denoting and qualifying are not confused. We need other concepts and criteria for evaluating all the visual arts, fine, commercial, applied, to identify and evaluate their quality--integrity, impact, improvisation, organization or design quality and use of media. If we continue using art both to denote and to qualify we will deprive students of the aesthetic criteria they need to evaluate all phases of art.

As this thesis is developed it will become clearer, I hope, why the denotative concept of art is necessary if art education is to respond to the social demands of the day. Specifically, in contemporary society art is used in the full range from the sentimental to the profound, the superficial to the intrinsic, the commonplace to the unique, the repetitious to the divergent, the tawdry to the refined. Examples from each stage of these continua can be found in all of the major visual communication systems:

those traditionally called the fine arts,
in all product design including the handcrafted to the mass produced,
in all advertising, display, and packaging,
in architecture, city planning, and urban renewal,
in television, publications, and moving pictures,
in interiors and costume design.

Further, art exists in the present conditions of our cities and towns, representing many periods and copies of periods, in assorted states of preservation or decay. The whole broad face of America expresses values and attitudes through art forms and their condition. The art quality ranges from the sublime to the odious, and students must have qualifying concepts to evaluate the whole range if they are to make aesthetic discriminations as citizens in a democracy.

The Functions of Art

Art has varying functions in the lives of mankind which need to be considered as we develop curricula in art for students from various subcultures as they in turn are affected by social change. Some degree and combination of these functions of art are found in all cultures past and present.[1] Art is used to maintain the values, attitudes, and sense of reality from one generation to another. It is used to give character, identity and status to groups of people, individuals, institutions through mutually understood symbols--the styles of architecture and costume. Almost all religions use art forms to create their affective environment and stimulate the essence of worship. Political systems use non-verbal symbols to encourage recall of the values upheld. A symbol may have many meanings depending upon its variation. People with different backgrounds bring somewhat different sets of concepts into play when seeing it. The cross, for example, has pre- and post-Christian meanings and many derivations--a Maltese cross, a Latin cross and a burning cross stimulate recall of different concepts and emotions.

Some cultures use art for "group-self-reflection" as in social criticism and satire; for education to identify patterns of behavior, eras of history, significant ideas. Finally, art is used in more subtle, but often more immediate emerging expressions of the essence of being and direct interaction, using less literate symbols of form and composition.

Culture and Society

The concepts culture and society have, like most terms, evolved with usage. They are sometimes used differently in the different social disciplines. In this paper society is used to mean an organization of people whose interaction patterns cluster them as a group. The United States is a large society that, through a system of government and interaction, separates it from other national governments. Culture is used to identify the values, attitudes, and acceptable behavior of people from a common heritage. A classroom can be considered a society as it has a pattern of interrelations among its members. Within the classroom there may be many cultures represented, children who have backgrounds that have influenced the development of quite different values, belief systems, and concepts of acceptable behavior. Cultures vary with different socio-economic classes, religions, ethnic backgrounds, urban or rural environment, and geographic area. Our overall American society may have a broad identifiable culture, but it has many subcultures, large and small sub-societies.

Social class is identified by studying the ways groups of people relate themselves to other people, to economic level, and in some degree to behavioral patterns. Class stratification in this country is a reality that is often ignored by our idealism. Though there is considerable overlapping, shifting in an open society, there are identifiable differences between groups. They tend to share that which is called American culture, but they have distinct subcultural characteristics. Each ethnic group within a socio-economic class tends to vary in cultural pattern. Though social classes have general likenesses throughout the country, there are also regional differences, and differences if the groups are living in rural or urban areas.

A new term used by the sociologist Milton M. Gordon is particularly useful.[2] It is ethclass. He finds it necessary in describing the ethnic groups within the different economic strata of society. As more and more members of minority groups move into the middle and upper middle class, ethnic identification alone becomes inadequate to describe them, for they identify increasingly with mores of their social status. As this takes place more cultural diversity will be found within economic groups.

Gordon finds two conflicting trends in America. One is a pressure for conformity, due to middle class oriented education and the extent and intensity of mass communications.[3] The other trend is that subcultures of race, religion, national origin, and economic level are much stronger than has been assumed.[4] This in-group cohesion and persistence of cultural values and attitudes shows signs of increase. Most people's primary group interaction is within their subculture, while their secondary group activities tend to be within the larger society. Gordon finds that most of the professional and business leadership of the country comes from the middle class core culture, and from those members of other groups who have learned this core culture.[5] Another interesting trend which he identifies is the development of an intellectual subculture which includes some members of the academic community, the arts, and some of the upper levels of journalism, law, and medicine. Within this group ethnic differences are maintained by some, but there are also those who leave their ethnic subculture to become mainly part of the intellectual community.[6]

To those trained in education with the melting pot as an ideal, this pluralistic-culture with multiple value systems may seem paradoxical. Even if we decide that the core culture or middle class culture should be the focus of public school education for all American youth, we need to re-evaluate our goals in terms of the ethnic and cultural diversity of society. As art educators our problem is complicated by the fact that the middle class generally has not embraced the arts as central to its culture. It still has the stigma of being for an economic and cultural elite, and done by somewhat marginal people. Another contradiction emerges with the recognition of social class as a social reality by an educational system devoted to the preservation of an open society. The concept of the open society itself appears to exist within a middle class framework; that is, open from the middle class standpoint, and the school an institution for helping everyone become middle class.

MAJOR AREAS OF SOCIAL CHANGE IN AMERICA OF THE SIXTIES

Now that we have discussed briefly some of the concepts describing the structure of American society, we should look at some of the major changes that are taking place which influence and affect all the segments in varying degrees and suggest some possible implications for art education.

Emergence of Minority Groups

Probably the most obvious single force in American society is that of desegregation of public institutions and services for the American Negro. Public desegregation and serious questioning of the rights of the states to dictate interpersonal relations between races have brought the question of the rights of all minority groups to the fore. The provisions of the civil rights bill open the door to more opportunity for many others besides the Negro; this means far-reaching social change affecting most of the society.

A correlative of the civic rights of the Negro is his transition from a rural to an urban resident. In 1900, 90% of the Negroes lived in the South and in rural areas. In 1960, only five out of every nine remained in the South. In 1960, 73% of the Negroes were urban dwellers; outside of the South 90% of the Negro population was urban. Some of these people are definitely middle and upper middle class.[7] They have the same goals for themselves and their children that other middle class people have. They take excellent care of property, their children are very carefully trained. But there are many Negroes among the new urban population who have little or no awareness of the complexities of urban life, little ability to interact effectively within it, nor the skills needed to improve their living situations. The absentee landlord who continues to allow decaying slums to exist does little to help these people learn to help themselves. The magnitude of the problem of decaying living conditions with respect to the sense of identity and self-respect in the personality development of children can only be guessed.

The dynamic effect of the civil rights movement on minority groups that range from those who still live in degrading situations, whether they be Negro, Mexican-American, American Indian, or white, to those who have achieved the education and work opportunities to live with some dignity, portends to be one of our most serious problems. Some of these people will profit from civil rights so much sooner and in so much greater degree that the discrepancy between different Negro classes could cause even more volatile conflicts. Giving civil rights without giving economic opportunity and meaningful education could compound the social problem. All three are imperatives.

Economic Deprivation

The second change in American society is our recognition of the economically and socially deprived--the estimated 20% of our population who have less than $3,000 a year income per family. A large majority of these people are the undereducated members of the minority groups. Their young people are entering the labor market during the period when the children born during the post World War II baby boom are also entering the labor market. At the same time, automation is decreasing at a compounding rate the number of jobs that were most often done by the less educated people. These three factors--automation, increased population among those entering the labor market, which creates increased competition and the need for more education--decrease the chances of many economically deprived persons and those in the social minorities from ever emerging from this depressed state. A very real question for the educator is: "How effective are middle class oriented curricula in helping these children and youth deal with their immediate problems so they can work for the future?" Is education broadening the gap even with the limited education many of these students are receiving? Is this the reason that the drop-out rate among them is so great--the gap between their immediate needs, their view of society, and that of the schools too great? Are they overwhelmed that the society that demands that they go to school really has no place for them when they finish?

If the stability of ethnic identification and ethclass as identified by Gordon continues, and if little progress is made for the economically deprived in the next decades, then grouping and stratification in our society may be on the increase rather than the decrease. The openness of our society in terms of upward social mobility may be more limited, at least for those who are now in the deprived segment of society.

The group of citizens most involved in developing school policy--the local school boards--tends to represent the white middle class core. If the needs of the students in our multicultural society are to be met, this leadership should include representatives of these groups. In many parts of the country this would mean that more Spanish-speaking people, more Indiana, and more Negroes should be active members of school boards. It rarely happens now, and when it does the individuals are those who are an elite of their group, or have moved out of their background culture.

Implications for Art Education

In thinking of the functions of art in culture, and the social trends among minority peoples, what directives can we gain for art education? The *first directive*, to be sure, is that we need to do a great deal of research of the field of art, of the social functions and behaviors involved, as a basis for evaluating what might be possible to help these people. A study of the function of art in societies other than our own should give us insight into the way art forms, no matter how humble, operate in people's lives *right now*. We may have to be willing to look at these art forms with a new sensitivity to see how they function to give a sense of continuity and belonging to a community. If their art forms are making this contribution, then our introduction of art to members of these groups should include their symbolism. If not, we are in some degree teaching their children to devalue their own background. But one cannot make stereotyped judgments about children's ties to their background without knowing their *ethclass* as well, and the degree that they already accept or reject their background culture.

The American Negro is unique in his cultural heritage. Unlike the American Indian or Mexican-American who has a long-standing art background that may have meaning and remnants of meaning, the Negro has only the art forms that he has created in his more immediate past. He carried music forms from Africa, but his visual art forms were cut off. It appears that today's educated Negro's interest in African art tends to be intellectual rather than a culturally transmitted art form, available to those who have an opportunity to learn.

To understand the function of art for all urban people we need to become familiar with the cultural complex of our cities to identify the varied ethclasses represented. We need to make extensive study of the differences in values and attitudes toward art held by these various groups. Our sampling needs to include those who are working toward middle class assimilation, those who are middle class but desire to maintain ethnic identification. We need to identify the widely different segments of lower class society, to see what art might mean to them. This does not mean necessarily seeing how they react to the fine arts *as we know them*, but rather finding out how they may or may not use art in its broadest sense, which of mass media art forms are getting through to them. Attitude analysis will tell us what we need to recognize in beginning to make art experience of value, to relate it to what already has meaning for them.

Second, we need to take a long look at what we are teaching them about art. Are we helping children of these various groups preserve and develop symbols that help them preserve their cultural continuity, to identify and communicate with others in their same culture? Are we able to help them retain and respect their own culture at the same time that we give them the choice of accepting and appreciating all the visual arts? If we accept the concert of the pluralistic society--that it produces a richer, more varied national culture--then our art programs need to be developed at both the diverse and the universal levels.

Third, if we accept the function of the schools as an instrument for providing social mobility, are we including in our curricula opportunities for students to learn the discriminations and aesthetic sensitivity needed by people who do not learn them in their home environment. If we accept the assumption that the school has the further function of improving the environment, improving the standards of the core culture as well, then skills in art criticism need to be developed in language understandable to all age levels, and to encompass the broad uses of art.

Fourth, we need to look at cultures far removed from our own to gain perspectives for looking with more discrimination at the functions of art in our culture.

Ronald and Catherine Berndt are two Australian anthropologists who have made a comparative study of the diverse culture patterns of the Australian minority--the aborigines. They stress the importance of recognizing that these are contemporary cultures that have developed in different patterns from the white Australian, but not necessarily "different in quality or degree."[8]

Art forms and motives vary in the different groups. They range from naturalism to highly conventionalized symbols that can be understood only by those who know the meanings. Within a cultural group distinguishing individual artistry is apparent, yet a group pervasive is clearly recognizable. As groups vary in their art forms, a commonalty of quality that distinguishes Australian aboriginal art persists.[9]

Each art form has some degree of meaning. Some serve as a partial check on forgetting of complex verbal literature that is handed down for many generations.[10] Others reinforce religious faith by giving the participants a means of expressing their own religious experience. Religious ideology may be represented by series of key symbols of their belief system.[11]

The aborigine today ranges from the full-blood living very much as their forefathers did, in a slowly changing culture. Others have only a few words and memories of their past culture with which to identify, but are separated from full participation in their new, learned culture by their physical appearance.

If these seemingly homogenous peoples have this much diversity, we should gain insights into the vast cultural variety and symbolic meanings that may be found in our own country. The American Indian, the Mexican-American, the Negro, the Oriental, the New England white Anglo-Saxon, the religious and/or cultural Jew, the Irish, the Italian, the Eastern, Northern, and Southern European, the Southern American, the Southwesterner, the peoples of the newly cosmopolitan Pacific Coast all represent multiple social classes, cultural, economic, and social subgroups; and men's culture, women's culture, teenage culture all see symbolic meaning in somewhat different and changing ways.

As we analyze each of the major social forces we find that they are interdependent and interfluential. The implications for art education that appear important for one often apply to the others. It is only for the sake of clarification that they are separated.

Population and Urban Increases

The third major change in American society is the increase of population, compounded in its impact by the increase in urbanization and shifts of people within cities. In 1963 it was estimated that in three years there would be 10,000,000 more people in this country--and we are well on our way. If current projections materialize, there will be 225,000,000 people in the United States in 1975--ten years from now. In 1963 there were 50% more teenagers age 16 than there were in 1962; now they are 18 years old.[12] Think what this means to population trends when these young people become parents, even if the present slow decrease in birth rate continues.

The size of cities during the ten year period from 1950 to 1960 has varied throughout the country, but the national average is very high. From an analysis of 216 metropolitan areas the national average is estimated at 26.6%.[13] This figure represents the global area of a central city with its suburbs, whether under one government or not. Such growth puts tremendous strains on city governments to uphold standards for the overall city when the demands for expansion are so immediate, the money to be made from mushrooming housing developments so lush, and the tendency to crowd low income groups into less and less space per individual in the decaying parts of the cities so prevalent. In all cases, increase in population puts a strain on all existing facilities--schools, hospitals, care for the aged, transportation, law enforcement, and recreational facilities.

All these pressures of immediate problems to be solved tend to direct less and less attention to the aesthetic quality of our cities. The value on expediency, getting things done as quickly as possible, that is so much a part of our expanding economy, allows little time for the solving of the practical problems of city growth in terms of the long range visual effect of the cities themselves.

These trends all point to the critical necessity of educating more people in the visual arts, so that this period of what may become the greatest growth of cities will not result in more and more ugly monotony as slums are renewed, in bland and impersonal areas that have little color or cultural meaning. When the problem of the increased numbers moving into cities is compounded by the percent of these people who are ill-prepared for living in urban areas of complex and diverse cultures, we see how important art becomes as a means of developing a sense of community through variation in meaningful design and symbolic communication.

The complexities of city planning often leave the human dimension with much less attention than it deserves. Planning is often concerned with the acute problems that are easily measurable--traffic congestion, the need for better access to services and goods, housing in terms of statistical averages. Real estate boards and vasted interest groups often live within their own economic and social group cultures and tend not to think in terms of the whole city and the diverse cultural groups within it. Though leading architects and urban designers are often social architects as well, many magnificent plans for urban renewal do not consider the cultural or the aesthetic needs of people. Even the aesthetic needs are often in terms of an educated elite, not the population who will use the housing.

I do not propose that our levels of taste would be reduced to some common denominator, but rather than designers and architects be aware of the cultural diversity and plan so that the life patterns of people are not needlessly destroyed, rather that they are maintained, enhanced, and developed. At the turn of the century the emergent new plans for developing our cities had the "melting pot" as a basic assumption. Plans for renewal after World War II were based on the assumption that population would stabilize, and were made for a much smaller population than was actually born or migrated into the cities.

Henry S. Churchill, the architect, in his well-titled book, The City Is The People, pleads with city planners to review the old plans of the last fifty years, to see how inadequate they have been in effectively dealing with the situation as it actually exists. He is among those architects who are concerned with the social and psychological life-space of the people who make up the city. He asks for preservation of areas of color and imagination, as well as opening space, for diversity rather than planning by averages which don't really fit any group's way of life.[14]

In part, a long-standing tradition needs to be broken. The architect has traditionally been a designer for the elite or large organizations which were responsible for other parts of society. Today this is exemplified by architects working for metropolitan districts, for large insurance companies that invest in what has been planned to be slum clearance. European city planning, because of the necessary rebuilding due to World War II, has included more effective housing for low income groups. In this country no one bombed out our slums, there is money to be made in perpetuating them, so our renewal trails far behind in terms of our capacity to produce.

Another American tradition--the rights of the individual--has been distorted into a callous disregard of society's natural and aesthetic resources. Our air and our countryside have been treated as *private* domain to serve the cause of monetary progress, irrespective of the visual consequences in the *public* domain. *To stress each citizen's responsibility, to evaluate the quality of his aesthetic contribution to the public view, in the face of the tradition of socially irresponsible individualism, may be crying in the dark.* But the public reaction to air and stream pollution, the President's plea for a beautiful America, the progress made by responsible industries, may encourage public support for art education in helping students gain the capacity for critical aesthetic judgment as part of their civic responsibility.

Another shift that needs to be made in our thinking is the idea that something that is well-designed according to our tastes will have meaning to other people as well. We are extremely egocentric as a people, seeing the world only through our own eyes and through our own ethclass values. It seems to me that art educators must take responsibility for a much wider curriculum. Certainly, our long standing goal of helping individual children and youth acquire an open avenue of expression through art is as important as ever. As we have less geometric space in which to live, the development of self-direction and expression is important, but understanding design as communication, and its myriad application and use in creating rich and meaningful environments in our multifaceted and increasingly complex society is needed as well. We cannot allow people to grow up as visual and aesthetic illiterates and expect them to be aware of their aesthetic responsibilities as citizens.

Automation and the Increase of Leisure

Programmed production and the decreased work week, somewhat independently of each other, are influencing a fourth area of change in American society. Automation is increasingly accelerating the long range decrease of working time that has been going on during this century.

The Darnell Corporation survey of 342 United States and Canadian companies points out a recent and decided trend toward the reduced work week, particularly when vacation time is included in yearly work patterns. Prior to World War II only one worker in four got a paid week's vacation. Between the two decades of 1940 to 1960, the total working time for the average worker dropped the equivalent of four weeks. In the last five years, a great increase in vacation time has developed, with half the salaried workers getting a month's vacation sometime in their career. Paid holidays have increased in 25 years from an average of two to over seven. Now if a person works on a new job six months he gets a week's vacation, a year's work qualifies for two weeks, after three to five years the period is three weeks, and after ten years, a month. At present, one in four workers in this sample works between 32 and 40 hours a week.[15] The main trend indicates that there will be more people with leisure time than ever before in the history of mankind. Now the machine is freeing vast numbers for leisure that they have neither cultural pattern nor cultural training to use. Decrease in work creates both leisure and unemployment, but the unemployed have no leisure if it is defined as the time one has beyond gainful work.

One of the most crucial problems of automation is what it does to the new worker, the young man or woman with or without a high school education. Automation is cutting down most drastically in those kinds of unskilled jobs in which young people got the experience they needed to move up in the labor market. As the 1947 war baby population enters the labor market, this will probably increase the percentages of unemployed youth.[16] These same unemployed youth, if these conditions continue, will have fewer opportunities for a first job. It was reported in the winter of 1965 by the Population Reference Bureau that over 1/4 of the 1947 baby boom, now aged 17, are out of school and looking for work.[17]

The Negro and the under-educated are most affected. In 1962, 11% of the non-white members of the working force were not working, compared to only 4.9% of the white members. It still remains twice as high. Among all groups, 2/3 of the unemployed had not finished high school. The overall percentage was 9% for those who had not finished

9th grade, 7% for those who had not finished high school, but only 2% for those with some college education.

One of the long standing concepts that has underlain much of our past history has been that those who work have a right to income, and income is necessary to life. We have assumed that we could carry a certain number of people on relief. Now we are faced with a revolution in the nature of work in which the machine replaces people. We are faced with having to decide whether or not we will change our concepts of what work is, what would be repaid by society for service to it, or whether we shall consign more and more people to lives of inaction and poverty.

In a succinct publication of the Center For the Study of Democratic Institutions, Gerald Piel and Ralph Helstein discuss the relation of work to income as follows:

> Helstein: I accept the fact that full employment at this juncture in time is a misleading goal if by full employment is meant the traditional kind of jobs in the private market--a market that has failed in the last five years to produce the kind and number of jobs necessary. A revision of our concept of work is required. After all, work is only what society says it is. There is no reason why we cannot start redefining our notions of what work is and in this way provide full employment. . . .[18]
>
> Piel: The underlying scandal of what we are talking about here is that the market economy offered and promoted kinds of work that were sanctioned by the values of the market and the profit system. The function we are talking about, the people-to-people function, is notably not conducted for profit or market-generated . . . .We are talking in terms of fundamental changes in our society that go beyond the emergency measure of providing an income for everybody, to building a society with an entirely different set of values about what qualifies as socially useful work.[19]

As we reflect on what these men have said, and think about the arts, we may gain some insight. The arts and the artist have long been outside the mainstream of American life. Though gaining in prominence, the stereotype of the artist is still not an ideal personality type to which young people may be motivated. As this change in the concept of work takes place, will we in the visual arts be ready to provide the impetus and education so that the arts can become central activities in socially useful work--improving our cities and our homes, and the quality of our experience, as well as contributing to the quality of production; in creating new dimensions for communication which have symbolic and aesthetic meaning in our diversified society? Can we help more people contribute to society through art, who are now denied admission to the market economy?

As concepts of work and play change, our evaluation of leisure will of necessity change. One possible explanation of the reticence found in American education against accepting education for leisure in the elementary and high schools has been our Puritanical tradition that non-work is somehow related to sin. Though the social structure of American life is changing, the concept of a college education as a doorway to the good life, which includes the right to leisure, has preserved the liberal arts in higher education. To educate for leisure below that level has somehow seemed unimportant because we have assumed that only the elite have the right to leisure. The further stereotype that the arts are the play of the leisure elite, and the artist a social deviant, because he participates little in the mainstream of economic gain, have contributed to the peripheral position of the arts in public school education.

As art educators we have felt the need, and in part rightly so, to defend the artistic dimension as vital to good economy, long range planning in cities, the development of significant communities, and necessary for improved production. At the same time, the nation as a whole must recognize that increased population, automation, and the decreased work week mean that a majority rather than a minority of society will be in the leisure class. So we must educate the public to recognize that education in the visual arts is vital to the development of citizens in our society because it is one of the primary communication systems, and that it is also a means of individual and collective development during leisure.

MASS MEDIA AND ITS EFFECTS ON SOCIAL CHANGE

Mass media is a major factor to be considered in social change. It accentuates the differences between its general standard of mediocrity and commonalty and the diversity of cultures and economic levels. It purports through advertising, to identify the so-called good life which anyone can achieve if they are just able to buy the right products. Paul Hoffman identifies rising expectations, as a result of increased communication and transportation, as one of the most crucial factors in international affairs. He writes: ". . .rising expectations" are ". . .one of the most powerful forces affecting the future of mankind." He cautions that one face of the movement is a desire for progress which we must help or we will have ". . .the other face turned upon us. This is the ugly face of violence and even chaos, born from hopeless frustration and despair . . ."[20]

At the same time that the open door to opportunity seems to be closing due to increased automation and population, these same people in this country are able to see at least a distorted picture of the affluent society. We need careful content analysis of the values being projected through mass media, as well as continued study of the diversity of values in American society, to be able to understand the conflicts, the anxieties and frustrations that television, for instance, may produce among children from deprived segments of society. There has been extensive concern over the violence on television, but little for this more subtle influence with its distorted picture of "the good life" in creating hostility and frustrations among the economically deprived.

In another report of the Center for the Study of Democratic Institutions on the nature of the American Character, Jack Gould, Television Critic of the New York Times, analyzes the power structure of American television, and the decision-making that goes into the selection of programs. He states: ". . .the real control rests with the sponsor. By the act of not purchasing certain kinds of programs the sponsor exercises a tremendous force on television programming. The sponsor's negative power is enormous . . .he has a power of veto over what the public sees; he simply does not buy that program."[21] News and public affairs programming are the two areas where, as he says, "Sponsors, to their credit, have kept their hands off." It is in the area of creative writing for television that Gould finds the greatest disaster, both to the arts and to society. Nothing controversial that is to be found on the contemporary scene can be used. Only those writers survive who are well-trained "in the taboos of the business." Further, the uncreative, plot-repeating westerns, situational comedy, horror and gangster programs come when the greatest viewing takes place, from eight to eleven at night. Sunday mornings and late evenings provide the main alternatives. Any book shop, any news stand, any record store provides the consumer with a far greater choice. But for many the window on the good life, the advertising that accompanies their diversion, is not only a farce on life, but is also unattainable.[22]

The major question which the impact of television and mass media on society raises for us is whether we do, or can, give students the tools with which to evaluate the obvious and the subtle messages of this one-way communication system. We have the obligation to try to offer students more alternatives. This requires that we be aware of what they are receiving; that we analyze the art forms being used so that we may help them develop and use aesthetic criteria in their evaluations.

ANOMY

The final social force is "anomy" in American society. Merton defines it as a "breakdown in the cultural structure, occurring particularly when there is an acute disjunction between the cultural norms and goals and the socially structured capacities of members of the group to act in accord with them," or to put it in other words, situations where the individual cannot relate himself to his perceptions of the norms of society, resulting, among other feelings, in a sense of isolation. What happens to individuals also appears to happen to groups of individuals.

Sociologists and social and personality psychologists disagree as to whether or not anomy is increasing. Durkheim and Merton deal with social conditions and their relationships to deviant behavior. Others, mainly psychologists, are concerned with the kinds of personalities which, in response to certain kinds of social situations, become more deviant in behavior. Those who study personality factors in anomy feel that one cannot evaluate the trend of the overall society as being more or less anomic unless one identifies the point of view of the observer.

McClosky and Schaar, in a review of the literature and their own study of national and Minnesota samples, report that anomy is found mostly among old people, widowed, divorced, and separated; under-educated, persons with low incomes or with low prestige positions; people moving downward socially; Negroes, foreign-born, and non-city dwellers and farmers.[23]

They feel that these people have less opportunity to interact and communicate within the dominant society, and thus have less opportunity to "see and understand how the society works and what its goals and values are."

Anomic feeling may come from the social situation for some people, from their own personalities in others, or can be a combinate from both sources.

In a comprehensive series of tests, administered to random national and Minnesota samples, these researchers find the following trends. Low anomy correlated highly with high education, intellectuality, high tolerance for ambiguity and those who took social responsibility. High anomy was correlated most with low education and intellect, intolerance of the ambiguous, dependence on black and white answers, and low social responsibility. Using the totals for their figures on tolerance (Table 9), I found the following percentages of persons high in anomy: 35% of the people in the national sample and 28% of those in the Minnesota sample were high in anomy.

Some percentages of these people were found in all economic and educational levels, though predominantly found among the under-educated, under-privileged, the rigid and anxious who have less opportunity for social interaction with the dominant society through "communication, interaction, and learning. . ."

Whether these figures represent an increase or not, they do represent a serious situation which should concern educators, for it apparently concerns one in three students. The big question for the art educator, it would seem, is: how can art experience and symbolic communication contribute to the sense of identity and social participation of these people? Many of them will be found among our new urbanites, certainly among the economically and socially deprived. This dimension of psycho-social behavior, like the "ethclass" becomes a confounding but useful tool if we are really concerned about developing art curricula that can have meaning to all American children and youth.

These are the key issues as I see them. What do they mean to us? Some investigators of American society feel that this is the era of greatest rapidity of change in human history. This means that we need greater flexibility in our use of categories, more awareness of the possible alternatives to our assumptions, than ever before. At this point, we may feel we have opened a Pandora's box by looking so briefly at complex social factors that are acting and reacting upon each other to change our way of life. A caution is needed here. Culture does persist, attitudes and values sometimes remain beyond their usefulness, but in our haste to meet the challenge of change, we may heedlessly throw out values that have continuing importance. For example, when some of us plead for the use of more intellect in art education to solve aesthetic problems in modern society, we should not negate the use of *intuition*, *improvisation*, or even *personality projection through art*. Because we believe that art has a place in the lives of all people does not deny the right, and society's need for, an *aesthetic-creative elite* to break the barriers of artistic discovery. The recognition and encouragement of the best in the fine arts does not necessarily have to negate, as non-art, the ethnic and popular arts that have meaning to large segments of society. *We need only to ask that the students develop evaluative criteria for responding to all the visual arts*.

REVIEW AND IMPLICATIONS FOR ART EDUCATION

In summary, the big forces in social change that have implications for art education are as follows:

First, we find that American culture, as studied by sociologists interested in social diversity, is much more complex than we may have imagined. Subcultures appear to maintain their characteristics even when they change socio-economic levels.

Second, minority groups are emerging into fuller citizenship roles through increased civil rights, but within these groups the opportunities to utilize these rights varies significantly.

Third, the plight of the economically and socially deprived is not helped by automation, population increase, and the decrease of jobs, even though civil rights may give them more right to opportunity.

Fourth, the increase in population that are centering in urban areas, the increase of megapolis, is bringing many people to cities who know little of the ways of city culture. Urban renewal without some education and continuity from past culture may create new problems of anomy, and new slums.

Fifth, automation is decreasing the number of jobs, particularly for the under-educated. The chances of entering the labor force are decreasing for the under-educated minority youth. Further, automation is decreasing the need for working hours. More people will have more time for leisure than they need to earn a living.

Sixth, mass media, at present, is making shallow use of the arts to present a picture of the good life which centers around the use of its products. The pressure to enter the so-called good life through acquisition of the proper products comes at the same time that automation and increased population, in combination, decrease the purchasing power of approximately one-fifth of our people. At the same time, there are combinations of factors; automation, increased population, that appear to be decreasing opportunity in our society, as society as a whole is beginning to be aware of its social responsibility to all members.

Seventh, anomy, social isolation, operates to compound the problems. Those who are most separated may be the most easily affected by society's lack of recognition of its diversity, and by decreased opportunity to operate in the dominant society.

Our question then becomes: what can we as art educators do to begin to deal with these problems as we try to cope with the education of all children and youth? What follows is only my own attempt to try to identify the kinds of behaviors requiring aesthetic judgments that appear to be needed by the members of our society, and then to postulate some directives for art education.

The first deals with rural people learning to live in crowded cities, and slum dwellers moving into urban renewal.

1. Preserving, through their own creation, the symbolism of their background culture if it has meaning for them.

2. Developing independent judgment in evaluating what is presented to them in the city.

3. Learning to take responsibility for their contribution to the public view.

4. Learning basic skills in production and maintenance of what they do possess.

5. Becoming aware of the differences between order and disorder, and the differences in impact these have upon themselves.

6. Learning ways to make order and variation through groupings of color, of forms, of line and textures, etc. with minimal materials.

7. Developing new avenues of socially useful work through art.

Teachers who attempt this will need to be prepared to understand cultural, economic, and personality differences among groups of children so that the initial comparisons are with things that have meaning to them. In some way the goals of the teacher will have to be related to the goals the students have for themselves--which in many cases will be the goals given them by mass media. By attempting to start where they are, with what is important to them, a beginning can be made. If art is not related to their own past experience, to their own goals, the beginning experiences upon which further learnings in art can be built will not take place. This is as true in teaching middle class children, where art is not respected in the home, as those whose folk art or lack of art has not prepared them for using art in their civic and social responsibilities.

A question I can see being raised by some of us is: "Lots of kids from most deprived backgrounds are very expressive once they get a chance to use some art material. Why all this emphasis on differences in background?" My answer to this is to agree in part. I've had the exciting experience of watching hostile, rejected students pour out their feelings with paint. I wouldn't discourage this kind of communication. But does this help these youngsters make aesthetic judgments to improve the quality of of their experience? Does it help them preserve their own unique background and still help them contribute to the life of those around them? Does it help those who don't open up in this kind of experience, to find art operative and useful in their own lives? Will self-projection alone open up avenues for art in the new dimensions of what is to be called work, that some of our sociologists see as necessary in the immediate future?

Some of these behaviors we have discussed are needed by all children in this mobile society where people change their residence so often. The following are some aesthetically based behaviors I believe should be considered in all art education:

1. Helping students see the functions of art in culture as it transmits values and attitudes, and identifies cultural meanings.

2. Helping students respect and understand cultural pluralism in our society by becoming aware of the functions of art in our many subcultures.

3. Helping students recognize the importance of the aesthetic dimension in the economic and political decisions of civic affairs, in urban and rural renewal, conservation, city planning, and neighborhood development.

4. Helping students discriminate and evaluate the symbolic communication of mass media to preserve independent judgment.

5. Helping students understand the uses of intuition and creativity so that the arts can become avenues for self-directed use of leisure.

6. Helping students understand the multifaceted interaction of the elements of design so that they may develop a basis for aesthetic discrimination.

7. Helping students to differentiate between social aesthetic responsibility and individual divergent creativity; to develop and preserve the uniqueness of the individual while increased population and decreased space require more cooperative planning and social responsibility.

8. Helping the artistically gifted to recognize their responsibilities to society as designers, artists, and architects.

To further develop these objectives, we in art education face several tasks. We need to know a great deal more about the functions of design, its structure, so that we can teach it to people of widely divergent backgrounds. We need to study the differences in values and attitudes about art and about the life of many more groups of people. Certainly this includes becoming aware of our own basic assumptions about art and its relation to life as we understand our own unique backgrounds. Finally, we need to do considerable classroom research in means and methods of making design meaningful and useable in all segments of American life.

We must become increasingly aware of the political, economic, cultural realities of our cities today as they affect the rapidly changing society, if we wish to make the aesthetic dimension felt. We need to teach art in general education so that all concerned with the city and its development--its managers, planners, economists, and its electorate--are keenly aware of the aesthetic impact of their decisions on the lives of people. Further, we must so understand the cultural diversity of students so that art will have meaning in the lives of more and more people, to preserve culture, to enhance their day-to-day living, and preserve their group uniqueness and their individual identity.

We in art education can probably contribute only a small part to the solution of our nation's monumental problems, but we cannot even begin unless we are more aware of the complexities and dynamics of change which we face. In teacher training, in curriculum development, in research, our best creative efforts, based on a broad awareness, would help us give American youth the aesthetic tools they need.

Art education as I understand it is multifaceted. Its content is drawing, painting, sculpture, etc.; it is design in its broad ramifications; it is art as historical impact, it is art criticism, it is also cultural communication. It requires the art of teaching based on highly developed understandings of individual and cultural diversity and their relationship to learning. The art teacher can them become a central figure in cultural transmission and development.

LIST OF REFERENCES

[1] McFee, June K. Preparation for Art. Belmont: Wadsworth Publishing Co., 1961. Chapter XX.

[2] Gordon, Milton M. Assimilation in American Life: The Role of Race, Religion, and National Origins. New York: Oxford University Press, 1964, p. 51-54.

[3] Ibid., p. 74-76.

[4] Ibid., p. 34.

[5] Ibid., p. 73.

[6] Ibid., p. 254-257.

[7] Lee, Everett. "Internal Migration and Population Redistribution in the United States." Freedman, Ronald, ed. Population: The Vital Revolution. Garden City: Doubleday & Company, 1964.

[8] Berndt, Ronald and Catherine. *The First Australians*. New York: The Philosophical Library, 1954. p. 12.

[9] *Ibid*., p. 104.

[10] *Ibid*., p. 80.

[11] *Ibid*., p. 75.

[12] Cook, Robert. Population Reference Bureau, Washington, D. C. Population Growth Symposium, Palm Springs, California, November 11, 1964.

[13] Statistical Abstract of the United States, 1964, 85th edition, "Metropolitan Growth."

[14] Churchill, Henry S. *The City Is The People*. New York: W. W. Nuton, Inc., 1962, pp. 198-202.

[15] Porter, Sylvia. "New Trends in Vocations" (Syndicated News Column), Prepublication Review of Darnell Corporation publication. New York, June 2, 1965.

[16] Brandwein, Seymour. U. S. Dept. of Labor: Manpower, Automation and Training in *Britannica Book of the Year 1964*. Chicago: Encyclopedia Britannica, Inc., p. 343.

[17] *Loc*. *Cit*., Cook.

[18] Helstein, Ralph; Piel, Gerald; Theobald, Robert. *Jobs, Machines, and People*. Santa Barbara: Center for the Study of Democratic Institutions, The Fund for the Republic, Inc., p. 15.

[19] *Ibid*., p. 20.

[20] Hoffman, Paul. "The Future of Mankind in a Shrinking World," *Views and Ideas on Mankind*. Council for the Study of Mankind, Bulletin No. 15; Dec., 1963, p. 2.

[21] Gould, Jack. Television: One of a Series of Interviews on the American Character. Santa Barbara: Center for the Study of Democratic Institutions, The Fund for the Republic, Inc., 1961, p. 3.

[22] *Ibid*., pp. 4-6.

[23] McClosky, Herbert and Schaar, John H. "Psychological Dimensions of Anomy," *American Sociological Review*, Vol. 30, No. 1, Feb. 1965, p. 14-40.

EXCERPTS FROM THE DISCUSSION WITH MRS. McFEE

Audience: Granting cultural pluralism, do you also see dangers in making a child aware of himself as having an identity separate from a group? If you do see these as dangers, what kind of criteria or what bases do we have that we use to generate knowing when we have gone too far in this awareness?

Mrs. McFee: This, of course, is an important question; but I think society tells him he is different pretty soon. I think this is something he is already learning one way or another. I can remember when I was in third grade the teacher stopped me from playing baseball with the boys and said I had to go back and play with the girls; and I learned then that it was a different culture.

Audience: One way of approaching this is by adding to this society the concept of a sense of self. This is what Professor Tumin was talking about, and diversity being a part of the sense of self.

Mrs. McFee: If you accept diversity as being valuable and don't try to have a common mold that everybody is to fit into as we do with grading where the "good guys" are the guys who get good grades and behave in class. If you allow for more diversity, then the child won't reject himself because he is different. It is the social context in which he learns this that's important. This is not a complete answer to your question for it is a big question and one that certainly needs to be developed.

Audience: Do I understand you to say that the teacher's job is to help students develop a standard by which they can judge the environment?

Mrs. McFee: Yes. Help them develop a standard but not present--not to give them a standard--no, but to become aware that color, line, form, and texture, to put it very simply, do have an impact on them. Change one and it changes the impact of the other. We need to tell them that package design is talking to them when they go through a grocery store--that when a television advertisement or program comes on, they are being communicated to through all kinds of subtle visual cues. When they are aware of this, they can evaluate design as one way of getting at this almost subliminal influence.

Audience: If you help them develop standards but you don't present any standards to them, is this to suggest that the teacher should remain neutral in respect to standards?

Mrs. McFee: This is a somewhat nebulous area. I can only tell you how I resolve it in teaching myself. I like to give them opportunities for exploration in design so that they are aware that design exists; then, give them alternatives of seeing various ways people in different cultures have handled this. Also, I have given people the task of going to different kinds of stores and writing a paper, a ten-page paper, on what communicates with say lamp designs in certain kinds of stores with the lamps in others. I don't tell them which one is good or bad, but they usually find out by description.

Audience: I recognize the values of sub-cultures, etc. On the other hand, we have a sort of responsibility for maintaining the integrity of the discipline. We don't want to get too involved in social engineering, to use a crude term, and thus lose our own identity as a body of professionals who have a certain amount of vital experience, knowledge, and information. We can't deviate because these various individuals we are trying to help might then through mobility arrive at a position where there is nothing we can offer them. I don't mean this to be a criticism of your remarks but I think they could be misinterpreted to destroy and modify many of the disciplines.

Mrs. McFee: I tried to set this in a framework that it never becomes an "either-or". It would be like saying that the only kind of mathematics we are going to study are the mathematics people need for adding up their grocery bill. We constantly need people exploring advanced mathematics and breaking new barriers, in the arts I think, also in art education we need to accept the idea that there are multiple roles for us. Some of them will fill the role you are filling, some will fill other roles. The more that we can talk together without feeling that one is hostile to the other because their points of view are different the better; but we are simply working on different facets of this great thing which is called education in the arts. I personally happen to be concerned with certain kinds of people.

Audience: Perhaps really we haven't arrived at a real definition of our so-called discipline yet, so that we can speak in the same terms.

Mrs. McFee: Yes. But it's evolving. We are exploring the dimensions. Art itself, the best of art, art criticism is a core. I feel that this is a core that all of us must never forget or neglect. Those of us who are concerned with all kinds of children in the public schools must also be concerned with them. It is the meeting of these things as Bruner talks about it--if you are to really understand a subject.

Audience: June, you have opened up a tremendously complex problem area for art education. You have done this in a way that seems analogical to what Professor Tumin is doing in his plea for personality concerns. At the same time, I am reminded by one of the things that Allan Kaprow said which brings to mind a one-worldiness. I think it was Kaprow who referred to the fact that art in New York is not too much different from Tokyo. Or was it Harold Rosenberg? You put forward a value on cultural pluralism, and I find difficulty in putting these together. I think that the perpetuation that we so often refer to as socio-economic class is partially by way of choice of people.

Mrs. McFee: Let me answer your first question. We have been discussing this rather deeply in the Southwest. What can we do to help the Mexican-American? When I say Mexican-American, it means a lot of things. It means that there are many different kinds of Mexican-Americans, different kinds of orientation. They were here before we were. We are the intruders but we don't know it, unfortunately. In many ways, their culture is richer and more meaningful than ours. Those in education who have been working with these people have been trying to find ways to help the educator so he does not reject the Mexican-American child, to help the child to learn the skills he needs to operate in Anglo culture. At the same time, in doing so, we don't teach the child that his own culture is bad, and this is a very valuable place for the concept of pluralism. Help him see that American society is made up of many groups of people to which he can contribute, and that his people have contributed a great deal to that particular part of the country. But if he is going to operate and have a job and a family, there are certain skills in this common culture that he needs.

Audience: I am concerned about the idea of cultural pluralism in regard to teaching art.

Mrs. McFee: We have a few groups like Pennsylvania Dutch (German) that brought certain forms of such art with them. Those forms, if they have been maintained at all, have been maintained at a gradually diminishing level within that group. It would be a great mistake for any attempt to revive those arts. The problem is for people to become aware of local art, that is, art that circulates throughout the world. I don't suggest that this should be the only thing. But if a child comes to school with some art symbolism that has meaning to him, we shouldn't cut it off from him.

Audience: Give us an example of some children who come from any parts with some art symbolism. I can't think of any.

Mrs. McFee: There is a lot of it in the West. There's a lot of it in the Southwest. I was at a festival just recently in which the Yaqui Indians who are Mexican refugees were carrying on a festival in their own little community in downtown Tucson. There was an adaptation of a three hundred-year-old Catholic ritual going on, and a Yaqui deer dance ritual as part of the same festival. Here is persistence of two cultures.

Audience: I think what we are talking about here is how the art that I am talking about and Allan Kaprow and some of these people talked about here can be brought down into those schools.

Mrs. McFee: I agree, but I think this should be done also. But, if we do that, do we have to reject the other?

Audience: I'm not worried about the art, I'm worrying about those children.

Mrs. McFee: I don't want to cut them off from anything, but I want to begin with something that has meaning to them so eventually we can lead them into a broader point of view.

Audience: You have to be extremely careful that the symbols a child comes with are genuine symbols.

Mrs. McFee: What I am asking and pleading for is for teachers to be well trained and cultured enough so that they understand to some degree the differences, and I agree with you that this could become a superficiality that would be hideous.

Audience: This is a very special culture, and I think by using the Indian culture as an example is rather misleading in terms of the normal urban culture with which the Italians--

Mrs. McFee: Yes, I think there are certain things in Italian culture, certain things in Scandinavian culture--

Audience: These people are far from it. They didn't come from a level in their own country which is aware of an artistic culture.

Mrs. McFee: You know Max Lerner's book on American civilization and the chapter on the popular arts. I think every group has art forms, and in some degree, we have multiple broader art forms.

Audience: I think possibly as well as an international art there is also some international non-art.

Audience: They are called airport handicraft. This is a technical term, by the way, and you will find it throughout the world.

Mrs. McFee: This is the kind of thing I want to help kids be able to discriminate.

Audience: There is no discrimination. It's just bad.

Mrs. McFee: We can give them the tools to recognize that. But at the same time, let's not cut off things that do have meaning in people's lives that we can use to develop discriminating taste with them.

Audience: I'd like to see your limits on cultural pluralism. I'd like to comment on an experience I had this summer where I ran into an institute of American Indians where about thirty American Indian teenagers dressed in chinos and white buck shoes and mumus were brought together to be taught about Indian culture in order to help preserve Indian culture which they didn't have. How do you feel about that?

Mrs. McFee: All I'm asking is that where it exists that we be open enough to recognize it and not cut it off, because if you cut off a person's art and it has meaning for them, you are saying "Something about you is not good". I think a lot of Indians are reading up on their background to try to find out about their culture. People are dancing now who weren't dancing or who were not allowed to dance in their youth because of the government, and there are many different reasons. To some of these people the art form has an important and valid meaning and is a means of self-identification. But to impose it upon them if they don't want it is a different matter.

Audience: I think there is a very fine point that you have been attempting to make which I would like to reiterate a little differently. One of the things that is happening in American society is the increasing complexity with respect to identification with the larger cultural movement. Jews, for example, who had a very rich life in some of the urban communities, when moving out to the suburbs, feel the loss of this kind of quality of life--the interactions, the speaking of the Yiddish language, the Jewish newspaper, etc. By virtue of people being thrown together, this quality of life is all but dissipated or has entirely disappeared. The point is, if I understand the point you are making, is to somehow enable people to become a part of the mainstream of American life, and on the other hand to maintain that cultural affiliation and quality of living that they presently have and which provides for them a very rich kind of experience. Given the nature of living in today's society, this is extremely difficult. It seems to me that art broadly conceived well beyond the visual arts can provide for this kind of existence. If one conceives of art to include not only visual arts but also ceremonial life and certain kinds of human interactions, then the school could elicit, maintain, develop and generate this quality of life in a society they are moving away from. This is a very valuable point that you have made and it ought not to be dismissed lightly. I don't think one has to reject one by accepting the other. It may be exceedingly difficult to do both, and it may not be possible to do both, but I think the business of entertaining the ways in which this might be achieved deserves some attention.

Mrs. McFee: The key point where I feel I did not make myself clear or where some of you were unable to differentiate was this; I am concerned about the folk art--the primary group symbolism--that has meaning in the lives of individual children, adolescent and adults. The concern is that we do not cut them off from this meaningful art form in the art education we give them in schools or the communities we design for them in urban renewal. Allowing them to retain meaningful symbolism is a very different thing from our selecting certain folk art forms as being worthy of revitalization and imposing them on people. To say it another way: to allow people an open channel of development through the arts from their present standpoint appears to be more educably sound than cutting them off from meaningful symbolism, if they have it, and imposing upon them our own art forms instead. At one time in the discussion a respondent stated that the immigrant groups were not people who were being exposed to the art of their own societies. This statement is made on the assumption that art exists only in the fine arts, and that the folk art that the immigrant brought with him was not art. This is the important point that I feel art educators must come to grips with. This is not a question of choosing one art form over another art form or rejecting the fine arts, but rather it is an educational decision about the quality of educational experience, the goal of which is to help all people learn to respond to as broad an awareness of their visual environment on all levels of art as is possible for them. We need to begin where they are.

LEARNING THEORY, COGNITIVE PROCESSES, AND THE TEACHING-LEARNING COMPONENT

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In his instructions for preparing this paper, the writer was asked to review central current theories of learning, to relate these to theories of teaching, to consider what knowledge about the learner is necessary to construct adequate theories of teaching and learning, to relate theories of learning to what is called "cognitive theory" and, if this were not enough, to consider all these topics in relation to learning about art. This staggering task has resolved itself into a series of vignettes of learning theories in psychology, reviewed historically to provide some framework, together with some comment on the possibilities and limitations of contemporary behavior theory as applied to education. Finally, there is a limited discussion of art from the viewpoint of child psychology.

The writer has long been struck with a seeming dichotomy in psychology as it studies behavior modification or change. There is a very long tradition which sees behavior change constructed bit by bit, through association of stimulus with response, repetition, and reinforcement or reward. This approach pays close attention to the stimulus situation and the changes in behavior which follow manipulation of this situation. There is another point of view, not as venerable historically, and not as elegant scientifically, which speaks of the growth and development of the organism. Hence, attention is paid particularly to the emergence of and variability in the organism's responses. Though seldom explicitly acknowledged, these approaches make rather different assumptions about the human organism and the study of its behavior. The former has been likened to a "closed energy" system, which is highly predictable, and the latter has invoked the concept of the "open system," in which the end state is much less predictable because transformations and the emergency of novelty are allowed, indeed, expected.[1]

In a most instructive review of the influence of learning theories on education, McDonald[2] epitomizes this dichotomy by contrasting the viewpoints of Thorndike and Dewey. Very perceptively, McDonald identifies Thorndike's organism as "passive" and Dewey's as "active." The latter view for long has particularly appealed to the social consciousness of the education profession. The writer believes that each tradition has its place in psychology and yields its own results. In education each tradition logically leads to a particular methodology in instruction as well as in research. What should be more fully recognized is that both traditions, with their peculiar methodologies, have a place in education, depending on the goals set, skills instructed and the outcomes expected. Man's behavior assuredly is conditionable, yet it also acquires a history which acts determinatively and selectively on further learning. Although this paper is not explicitly constructed to display the dichotomy described above, a certain resonance from this view, however artificial the distinction may be, will undoubtedly appear in these pages. In addition, the writer must frankly acknowledge that he has greatly abridged and over-simplified many issues in the interest of giving a general, comprehensive, relational view of a number of differing positions and of developing trends in learning psychology.

Early Approaches to Human Behavior

Being a developmental psychologist, the writer proposes to review the problem of learning developmentally, that is, to look at its history in order to understand its current situation.[3] In the application of psychology to education, we may start with Sir Francis Galton. His research interests and publications assured that in the twenty years following 1880, evolutionary theory and the concept of natural selection would be applied to the study of man's abilities and qualities. Without benefit of clearly formulated genetic principles, he nevertheless stressed the importance of family lines and viewed human abilities and qualities as biological traits. Most important for psychology, he developed techniques for the description and measurement of these traits, established descriptive statistics, and founded the study of individual differences. In more recent years it has been fashionable to accuse Galton of unworthy social and political views of man. Nevertheless his emphasis on human variability, combined with the later developed techniques of mental testing, were responsible for a fundamental change in educational viewpoint. We can trace back to Galton as one source the view that the child is not to be adapted to the curriculum; the curriculum is to be fitted to the child.

Among the primary sources of modern psychology we must, of course, include William James. In America, James created psychology as a branch of biology, to serve as a bridge between the science of neurology and the philosophy of mind popular in his day. While the day of his psychology is clearly past, nevertheless the functionalism of William James lingers in modern American psychological thinking. He focused on process, not content; on the how and not the what. If in a more sophisticated day we ask "why" rather than "how," it is largely that our heritage from James has made this advance possible. Although the term "learning" does not appear in the index of his famous two volume work, James developed his psychological views in the tradition of British associationism. He anticipated the concept of the conditioned reflex. In his criticism of that associationism, he touched on some of the ideas concerning the whole experience which we have come to associate with the Gestalt viewpoint. In his emphasis on habit, James clearly anticipated modern learning theory concepts.

Nor can we neglect the contribution of G. Stanley Hall, father of American developmental psychology. Hall vigorously advocated the study of man throughout his life span and in his many life settings. In a very real sense Hall, with his questionnaire method and his studies of children's interests and play, contributed mightily to educational as well as psychological research. He, too, contributed to the great educational change that came with the twentieth century. For he, too, advocated that the curriculum be fitted to the child's developing nature is described in terms of ages and stages, each with its characteristics. But he had little to say about learning as such.

Younger than James and Hall and outliving them in years and influence educationally was John Dewey. His classic criticism of the reflex arc and his interpretation of the dynamic relationship between the stimulus situation and the responding person as the basis of behavior and learning established him as a psychologist, but he quickly moved on to a much broader approach to education. His interest in the unconventional "experimental" school established him as a radical innovator rather than an investigator in education. Although in the functionalist tradition, his emphasis on the child's experience as the source of educational curricula gave form to the fundamental change that swept education in the early twentieth century. Lawrence Cremin's remarkably lucid account of Progressive Education[4] makes it clear that Dewey himself had little to do with this movement; it was a product of many social and political forces. But the movement certainly drew heavily on his ideas, especially as interpreted by William H. Kilpatrick. One of Dewey's great contributions certainly was his attention to interest and motivation in the learning process. Another was his emphasis on the importance of direct experience in children's learning. He dealt with behavior in massive chunks, including motivation and end products in his treatment of children's learning.

Education and an Emerging Science of Human Learning

The men thus far mentioned were not, strictly speaking, experimentalists. Their contributions helped shape a point of view about the human organism and its psychology, a way of looking at education as a learning process. The influential founder of the scientific study of learning in America was, of course, Edward L. Thorndike. First publishing around the turn of the century, his influence in education became steadily stronger, probably culminating sometime in the late 1920's. Although this is not the occasion for an adequate evaluation of his contribution, we may state that his interest was essentially in problems of human learning, though he began his work with animals and an interesting little book on child study. Moreover, his concern was with learning of complex behavior forms at a molar level, and in the motivations which facilitate learning. His famous laws were essentially empirical; although they were derived from experimental observations, they were formulated as generalizations from experience. He did not attempt a theory as we presently understand psychological theory. That Thorndike's laws now look like generalizations from common experience is because our thinking about learning has long been influenced by a psychological point of view. That they appear too molar in character is because we have become accustomed to a much more analytical approach to learning.

Of course, there were other great names in the psychology of learning -- Brown, Hunter, Judd, Carr, Stone, Peterson, to mention only a few. These investigators used complex mazes, fairly complex motor skills and relatively simple problem solving tasks. All these seemed appropriate to a foundation for a science of learning. True, psychology was not yet equal to tackling the school classroom and its tasks. But that would come in time. Between the years, say 1910 and 1940, there was a great accumulation of learning studies, many attempting to determine the conditions under which particular responses or response patterns could be built. They dealt essentially with measures of performance under various conditions of practice. Conditioning was still a matter for reflexes and physiology.

The results of these studies were, to say the least, disappointing. It seemed that one could develop broad generalizations which might facilitate training in performances and skills in a general way, as for example statements about massive versus distributed practice, but such statements were certainly not susceptible to precise mathematical expression. The specifics of learning seemed to be particular to each task and the experimental conditions used. Skill was a matter of repetition under optimal conditions of practice and motivation.

Transfer was a function of identical elements. A firm knowledge was the consequence of over-learning; character was an accumulation of specific habits, each learned as a response to a particular stimulus situation. True, attitudes involving emotions, and therefore physiology, seemed to be susceptible to conditioning. But attitudes also had an ideational content and were to be thought of in terms of these more general learning principles.

The implications for education were appalling. The teacher faced an endless task. He recoiled from the "theory" just as he shrank from the labor. Intuitively he recognized that learning as he saw it occur was not so fragmentary. Educational psychology turned from this approach to two new points of view.

One of these new points of view proved to be as illusory as certain of the phenomena it studied. Gestalt psychology, experimenting with perception, offered some "laws" whereby experience generally might be conceptualized and organized. During the '30's, a few educational psychology texts appeared which tried to describe the process of learning responses in terms of organizing the elements of experience into "good Gestalts." The perceptual demonstrations that experience tends to assume form and character in terms of coherent hence "meaningful" wholes, had a powerful appeal. But somehow, though much educational language remained dynamic and "Gestaltish," nothing came of the movement. From a rigorous scientific point of view, the concepts of Gestalt psychology are descriptive and not definitive.

The Child Development Viewpoint

Somewhere in the '20's or early '30's another movement in education rather successfully deflected educational psychology from the direction given by Thorndike; it picked up and continued some of the ideas contributed by Hall and Dewey, modified by Gestalt or "organismic" language. This was the child development movement. Underwritten by Rockefeller grants in the 1920's, a vast literature of descriptive studies in child growth and behavior appeared in the late twenties and early thirites. This material was picked up by educators as highly relevant to their needs. Many of the studies were naturalistic studies. They afforded descriptive data teachers could grasp and which promised greatly increased understanding of children. They implied, or seemed to imply, an organism with a "growth potential" which, given appropriate nurture, would flower into the good citizen of a free, democratic society. As Professor Cremin has so skillfully shown,[5] this movement accorded with certain deeply rooted beliefs of the American educator, his basic idealism, his belief in the worth of the individual, and his belief in the power of education to implement the good society, in which effective social relations were at once the criterion and the aim. The psychology of learning virtually disappeared from teacher education. It was supplanted by a heavy emphasis on personality growth and adjustment. The emphasis on the child as a sentient and a feeling creature almost eclipsed the child as a performing creature. Except for the handiness and the availability of educational tests it is possible that the emphasis on performance would have virtually disappeared, particularly in the elementary grades.

In the educational literature of the late '30's and the '40's, the child development viewpoint was considerably influenced by concepts borrowed from cultural anthropology, for the anthropologist (implicitly evolutionary in his intellectual origins) had likewise been influenced by child study and developmental notions. Somewhat later, educational psychology borrowed ideas from a burgeoning experimental social psychology. These trends, aided and abetted by the growing concern of a number of disciplines for personality and mental health in the late 1940's, rapidly approached the point where teachers were to see the educative process as therapy. Indeed, the writer recalls a recommendation that because play therapy seemed to help in remedial reading cases, such procedures could well be used for all children, as part of teacher reading! We began to hear of children as child psychologists, trained in "casual thinking" about their own and other's behavior. Presumably such insight could be extended to the understanding and manipulation of their teachers and parents also. The prospects were frightening for adults who merely wanted to do their jobs, rearing children or teaching school! This trend was apparently arrested by the growing popular criticism of education in the early 1950's.

Thus, educational psychology grew out of the measurement of individual differences, received a strong impetus to study learning, found the task of formulating empirical rules for each new performance rather formidable, flirted a bit with the general, wholistic principles of Gestalt psychology which sought to emphasize "meaning," and then settled upon child growth, especially personality development. These trends, together with certain other trends in teacher education, resulted in the separation of educational psychology from the psychology of learning, and saw the virtual disappearance of academically trained psychologists from the staffs of teacher training programs except in the largest universities. At the same time, educational research, which had been principally initiated by psychologically trained persons, tended to split away from educational psychology. These three fields seem, at least until very recently, to have advanced along increasingly divergent lines and to be non-communicative, except as here and there particular persons maintain more than one professional identification.

The Emphasis on Behavior Theory

Meanwhile, what has happened in academic psychology? A number of influences, which cannot be discussed adequately in this paper, had the writer the ability to bring them together, have greatly changed psychology. These influences include the concept of relativity in science, approaches to the idea of "meaning" developed in the '20's and '30's, and a new mode of scientific theorizing, based on the hypothetico-deductive model of physics and the notion of prediction and control as the primary aims of science. These aims differ significantly from the emphasis of an earlier day on understanding and prediction. Academic psychology has also vigorously reaffirmed experimentalism, so much so that several applied branches are currently worried over their status in psychology. The emphasis of this new experimentalism is on the identification and control of "causal" or antecedent variables, in an attempt to find the determinants of behavior.

Here perhaps we have the most important key to the change in psychology -- the emphasis on behavior. In a nutshell, the idea has been widely accepted that behavior, both muscle twitches and mental activity, is at once and everywhere the same, and its changes are governed by one set of laws, whether in animals or man, in the child or the adult. It is perhaps significant that of all the major works published in psychology since the late '30's on this focal psychological problem, only three have retained the word "learning" in their title: Guthrie's 1952 revision of his 1935 text, Bugelski's Psychology of Learning first published in 1956, and Deese's The Psychology of Learning, published in 1958.[6] Beneath this change in terminology are some fundamental changes in concepts. There has been a pronounced shift to conditioning techniques, and to very simple behavioral situations; for example, the simple T maze in place of the labyrinth, pressing a bar in place of escape from the more elaborate puzzle box, and simple visual discrimination tasks in which only two alternative responses are possible in place of problem solving and so-called rational learning tasks.

The shift in experimental fashions has not been whimsical. One striking feature of positions taken by learning theorists who have striven for a systematic theory was to reduce learning to a simple, single factor or principle. This trend, strikingly evident in the work of the '30's and '40's was in accord with the principle of parsimony in science, which rejects dualisms or pluralisms, whenever possible seeking a unitary principle underlying apparent dualisms and pluralisms. In more recent years it has become apparent that no one comprehensive systematic position on learning has successfully encompassed the demonstrable phenomena. Studies have failed to provide a reconciliation of all the findings uncovered. They did not discover consistent sets of general laws, nor did they yield concepts by which one could account for variations from experiment to experiment. Behaviors were adjudged to be too complex, and to be determined by too many contingencies. So psychologists drew back from human learning to animal studies, and from complex habits to very simple behaviors. Their task became to specify, in the experimental situation, all the contingencies and thus, all the determinants of behavior. They became interested in the course of behavior events under certain environmental contingencies rather than in the acquisition and improvement of a behavior pattern through practice. Thus they spoke less of learning and more of behavior theories.

As a consequence during the last twenty years there has developed a tendency to avoid the inconsistencies of the comprehensive theory by moving toward small theories which can account for particular results, produced under specified laboratory conditions with particular research designs. More particularly, learning psychologists have paid very close attention to their data language, identifying variables rigorously in order to be able to state quantitative laws precisely, however limited these laws may be in scope. In achieving this end they simplify and control behavioral situations in any way possible. They do not worry about generalizations. Indeed, they may go so far as to say with Spence[7] that contemporary learning theory in psychology has little to do with the kinds of learning the educator is interested in. Spence buttresses his position by pointing out that this is precisely what the applied psychologist does also if he is to get useful results. Making a careful job analysis the applied psychologist proceeds to discover relevant variables and to control them insofar as is possible within the job situation he is studying. He is then able to formulate rough laws governing the particular behaviors in which he is interested. The results have been distinctly positive, as has been frequently demonstrated in military and industrial training situations. However, the results are highly specific to the situation studied. Consequently, new research must be conducted as each new job skill comes under analysis. The result inevitably is a series of rather specific laws, some of which may appear to be contradictory

This situation results from the fact that no comprehensive theory is yet available. Nor is one likely to be available for quite some time, until the body of research, evidence and theoretical work has multiplied a good deal more than it has at present. We need to know a good deal more about the complexity of the organism as well as the complexity of the learning situations to achieve a comprehensive theory which will permit the management of learning according to general laws.

In the 1930's the discussions were largely three-way. Following the earlier practice in this paper of using names to epitomize general movements, these discussions were among Hull, Tolman, and Guthrie. In the '30's, Hull was developing a rigorous hypothetico-deductive model for scientific theorizing. His emphasis was on changes in the responses of the organism, contingent upon the changes in the stimulus situation, brought about by the reduction of drives. At the outset such drives are organic, but learned or secondary drive systems with the potency of primary drives are quickly acquired. Behavior essentially is determined by situational factors, and the primary within-the-organism factor is the drive state. This theoretical position obviously accommodated the conditioning principle of the physiologists. Tolman, on the other hand, spoke in terms of purposive behavior, "expectancy," cognitive maps, and other psychological processes internal to the organism. Tolman was, however, clearly a behaviorist, though his use of certain terms suggested to the unwary that he might be a Gestalt or field theorist. Guthrie in a sense studied an organism even more empty than Hull's, for he eliminated the need or drive-reduction aspect of conditioning. He emphasized the principle of contiguity -- the juxtaposition in time of stimulus events to the response of the organism.

Major Contemporary Views of Learning

Beginning in the late 1930's and the 1940's, three new positions, again established by particular investigators, have emerged and now command the field. Skinner's organism is quite empty, indeed.[8] In effect, he has been consistently empirical and a-theoretical. He works with two elements: the response and a reinforcer. In this system it is necessary to arrange the situation in such a way that a certain response, or class of responses, is likely to be emitted. When it does occur, it is immediately reinforced, whereupon the likelihood of its future occurrence is substantially increased. A reinforcer is defined in a somewhat circular fashion, as any change in the environment which will increase the likelihood that the response will occur again. Commonly a reinforcer is a small food pellet or, in humans, an approving word or nod, of knowledge of a successful act. Though Skinner avoids the term, reinforcers have the character of "rewards."

In his own words, Skinner "shapes" behavior by a method of "successive approximations." He has shown dramatically that responses already in the behavior repertoire of the animal or person can be brought to a high level of frequency of occurrence by particular programs of reinforcement, either consistent or "partial," that is, irregular distribution of reinforcements through a series of responses. More important for education, he has also shown that responses not in the repertoire of the organism can be formed out of more general classes of response tendencies. To use his own classic example, one can create a circling dance in pigeons within a matter of minutes by prudently reinforcing a neck and head extension or a forward and sideward movement of the feet, and not reinforcing behavior which would not produce movement forward and to one side. Obviously, to produce such a response in an untrained bird in a matter of minutes requires a great deal of acquaintance with the movements characteristic of pigeons, skill in selecting movements and timing in reinforcing them.

There are those who are troubled by this molecular approach to behavior. They insist that man is a verbal animal; he uses signs to substitute for behaviors, and he manipulates these signs inside himself in such fashion that he short cuts much "behavior." Skinner's position is equal to this challenge, however.[9] In his analysis of linguistic behavior, he views words as chained together by appropriate programs of reinforcement, producing the most complex "mental" responses. Staats and Staats in a recent book have ambitiously shown how by this chaining concept all sorts of complex behavior may be built up or "shaped."[10]

Skinner's famous teaching machine is the technical result in education of his theory. By breaking down behavior, in this case linguistic responses, to fine enough bits, and feeding them into the organism at an appropriate rate, one may lead the subject along the path of knowledge with a minimal number of "error" responses. Indeed, the subject's mistake is really the experimenter's error. A large number of investigators are now busily engaged in working out the implications of Skinner's position. Theoretically, they consider linguistic processesas chains of reinforced associations. But there is now considerable evidence that this bit-by-bit linear chaining may not be the most efficient method of introducing behavior change, at least for some kinds of complex verbal learning. Research[11] seems to support the contentions of the "branching" process in the programming industry -- that sending the learner off onto particular tracks, and switching him back to other tracks when he makes an error may be more efficient, or at least more satisfying to the learner. The element of problem solving, of search, of try-out-and-rejection, may be more important than the errorless linear procedures. If so, those who argue that meaning consists in complex associations, some of which are quite idiosyncratic, and in complex mediational processes, may find support for their position.

The second of these significant contemporary positions also uses the concept of the probability of response occurrence. Estes[12, 13] has written general mathematical equations for the probabilities of such events under particular conditions, where the responses have an alternative character. He has shown that in two-choice learning, the cumulative proportions of a reinforcing event and the cumulative proportions of a given response tend to equality. That is, "an organism tends to put out one response per reinforcement." Estes thus works with a mathematical theory of randomness and, by experimentally stripping away the conditions which make behavior non-random, demonstrates that choice behavior is indeed determined by contingencies of reinforcement in a manner mathematically predictable. Subjects who are appropriately instructed to disregard any hunches and simply to guess which of two lights will appear next, and who are reinforced randomly on one side of a double-choice light 70% of the time and on the other side of the choice 30% of the time, will indeed distribute their decisions in approximately the same percentage -- 70% to the more frequently reinforced side and 30% to the less frequent. If, however, there is a substantial reward or advantage associated with the side of greater probability of reinforcement, subjects quickly "maximize," or switch to that side virtually 100% of the time. This is the prototype of the "decision making" study, in very simple form, showing that human subjects, like animals, move their response rate to a level commensurate with the reinforcement level of the situation. A high reinforcement level encourages a high level of rate of response; a risk or penalty quickly shifts all responses to the side of greater reinforcement. These levels of response can be expressed as mathematical functions of reinforcement level and number of trials.

Estes has also shown that even though there are no available mathematics for predicting between two mutually contingent events, as when A's schedule of reinforcement depends upon the responses of B, and likewise B's reinforcement depends on the responses of A, the response probabilities do converge with the reinforcement probabilities over a long series of trials. Now this double contingency situation is more like the relationship of teacher and pupil, whose behaviors over time do show a mutually dependent character. It is Estes' position that very complex behavior, such as we commonly believe reasoning or teaching to involve, will not require elaborate mathematical models but quite simple ones. This does not mean that Estes plans to derive these questions in the immediate future, for there are many contingencies and complex interactions to be discovered. Though the mathematical models are expected to be simple, the equations may involve many terms. The writing of them is likely to be a very difficult task indeed.

The third major direction of learning theory in recent years is much less the contribution of any one man. More and more it has appeared necessary to interpose something between S and R to account for learning. Long ago, Woodworth suggested the symbol "O" for organism as that interposed variable. Such a term is far too broad for contemporary experimental requirements, however. Hull used minute antedating goal responses -- "fractional anticipatory goal responses," he called them. Osgood[14], [15]talks about mediating processes, inferred to be sure, but classed as intervening variables between S and R. He suggests these variables are r_m and s_m, where r_m is an internal response which becomes a self stimulus to the external, measurable R. Frequently these mediating variables are verbal in character.

A stimulus object S has a number of other external stimuli associated with it which impinge on the person simultaneously. These become conditioned to the totality of reactions (r_m) which the S arouses. When some of these associated stimuli appear later, apart from S, they continue to elicit part of the total reaction to S and thus become signs of S. These r_m become stable mediating reactions, arousing the s_m which set off observable R's. From this and other theories there has grown up an appreciable interest in "verbal behavior" or "verbal learning" which treats words as signs, and acquiring meaning through such myriad associations, strengthened by repetition.

The Issue of "Meaning" in Learning

There is an old argument as to whether thoughts are more than, or other than, words. Without entering that arena for full debate, suffice to affirm the writer's belief that some of these mediating veriables must be non-verbal. Certainly this appears to be true in childhood. Perhaps (and some few have said as much)[16] we must return to the older notion of imagery. Anyone who works with art, or studies artists, generally concludes there are internal mediating responses, serving as stimuli to observable behavior, which are themselves non-verbal in character. We will return to this point later.

The problem of verbal "meaning" is particularly tough and persistent. Mowrer[17], [18]like Osgood, essentially locates meaning in words acting as signs to elicit over behavior. The word is initially experienced in association with an object or situation which already has meanings (through previous associations). Part of the total reaction is conditioned as a mediating response. This part of the total response is the "meaning" of the word for the person and later will be aroused by the word itself. Mowrer admits there may be strong non-verbal elements in meaning, chiefly emotional and evaluative in character. He makes a distinction between "images" (conditioned sensations) of "value," and images of "fact," which are more denotative or cognitive in character. Conditioning involves two kinds of reinforcement which are emotional in character -- punishment (fear) and reward (hope). This function of a mediating emotional reinforcement keeps the person from forming many useless associations, especially in language learning. To the extent that a group of people share common associations with a word, it will have a common "meaning" for them. To the extent that individuals within the group have particular and unique experiences with that word there will be aspects of "meaning" of that word which are idiosyncratic, and not shared by others.

Through this idea of mediation, words can become synonymous, by being conditioned to the same mediating responses. This process is called mediated equivalence of cues. On the other hand, a person may distinguish an object or situation among several which appear similar to others through his private or idiosyncratic mediated meanings. This process is called mediated discrimination of cues.

Still another attempt to modify the simple S-R approach is the TOTE unit proposed by Miller, Galanter and Pribram.[19] It will be discussed here at somewhat greater length than we have accorded other quite significant contributions because of its particular relevance to "cognitive theory," which will be presented later in this paper. These writers, recognizing that something needs to be inserted between S and R, are not entirely unsympathetic with the notion of an image or map which according to cognitive theorists guides complex behavior. For a number of reasons, however, they believe the image too passive a concept; they refer a Plan. For this Plan they find an analogue in the program of the electronic computer. Unwilling to agree that living organsims are too complicated for behavioristic analysis, and unwilling to accept "schema" or "schemata" as constructs too vague for scientific usefulness, they postulate an hierarchial arrangement of behavior which would incorporate any segment of behavior, simultaneously considering it at several phenomenal levels -- the total X, the first breakdown AB, and a still finer breakdown in which A is composed of elements a and b, and B is composed of elements c, d, and e. The Plan, then, like a computer program, consists in arranging all the elements in the appropriate hierarchy so that X = AB = abcde, arranged, however, so as to preserve the implicit hierarchy in an outline of three levels of specificity rather than as a simple equation.

The basic functional unit of behavior in any Plan is identified as a TOTE unit, where the first component is Test (at the neurological level, a "comparison," between incoming signals which exceed a threshold limit and a central neural control pattern). This "test" constitutes the stimulus to which the organism is receptive. This stimulus is, thus, conceived of as an incongruity between the incoming signal, and an appropriate central neural control pattern previously established. This incongruity leads to a response -- the Operation of the organism until the incongruity vanishes, as checked against the Test (as defined above), upon which the response ceases -- the Exit phase of the unit. Test -- Operate -- Exit patterns may exist in this very simple form, but more commonly in complex hierarchies[20]. In addition to this neurological model the authors also conceive this unit in information-flow terms, and at a still more complex level as operating to order behavior sequences, much as a computer program orders the sequence of operations of the computer. In their own words the authors say:

> " ... Planning can be thought of as constructing a list of tests to perform. When we have a clear Image of a desired outcome, we can use it to provide the conditions for which we must test, and those tests, when arranged in sequence, provide a crude strategy for a possible Plan. (Perhaps it would be more helpful to say that the conditions for which we must test are an Image of the desired outcome.)
>
> " ... The operational phase can contain both tests and operations. Therefore the execution of a Plan of any complexity must involve many more tests than actions. This design feature would account for the general degradation of information that occurs whenever a human being is used as a communication channel."

The authors recognize the significance of language in the following words:

> "In man we have a unique capacity for creating and manipulating symbols, and when that versatility is used to assign names to TOTE units, it becomes possible for him to use language in order to rearrange the symbols and to form new Plans. We have every reason to believe that man's verbal abilities are very intimately related to his planning abilities. And, because human Plans are so often verbal, they can be communicated, a fact of crucial importance in the evolution of our social adjustments to one another."

Contemporary Pluralists in Learning Theory

Earlier it was stated that the major trend in the study of learning conceived in behavior theory terms was away from broad systematic treatments toward microtheories. There are at least two major writers who depart from this trend and who are willing to settle for more than one kind of learning in their attempt to present a more general systematic treatment of learning as such. Mowrer[21] presents a two-factor theory, based originally on a distinction between "sign learning" and "solution learning," and later revised around the concept of reinforcement, interpreted as punishment or as reward, thus maintaining the distinction between "kinds" of learning. In Mowrer's view, it is a mediating reaction, largely emotional in character, which is conditioned and constitutes the habit. This view, postulating essentially a dualism in learning, has aroused some controversy.

More recently, R. M. Gagne[22] has gone so far as to specify there are as many kinds of learning as there are conditions which specify or govern learning occurrences. He says:

> "In searching for and identifying these, one must look, first, at the capabilities internal to the learner, and second at the stimulus situation outside the learner. Each type of learning starts from a different 'point' of internal capability, and is likely also to demand a different external situation in order to take place effectively. The useful prototypes of learning are those delineated by these descriptions of learning conditions."

The reader is referred to his excellent book for the discussions in some detail. Here it must suffice to outline the eight types only briefly in order to show that Gagne does not consider them to be disparate, but closely related along a continuum which proceeds from very simple, elementary to more complex phenomena. Although the author does not emphasize it, one may also note that the eight types arrange themselves in a rough developmental order, in that the simpler types occur earlier in the life of the individual and the more complex types must wait for earlier learnings to be acquired and consolidated. This position, quite in accord with the basic idea that "each type starts from a different 'point' of internal capability," is compatible with the developmental approach offered by Piaget, and the cognitive approach of Bruner, both to be discussed later in this paper. In this developmental sense, capability may be defined as potential, and its realization as ability is a changing phenomenon based upon the learning history and experience of the individual organism. Insofar as development proceeds from simple to more complex the order of acquisition will be roughly the same from individual to individual. In this array, too, Gagne achieves order in the extant learning phenomena and to some extent in existing viewpoints. Finally, and of great significance to the educator, he illustrates all the so-called types of learning with educational examples.

The first type he calls signal learning. In its simplest form this is the conditioned response, where an extraneous stimulus becomes a signal for another stimulus which produces an intensely emotional response, usually pain. The important aspect of signal learning is that although the stimulus situations may be very specific, the responses to which the stimulus become attached as a signal are general, diffuse and emotional in character. The second type Gagne calls specifically stimulus response (S-R) learning. It differs from the previous type in that the response involves rather precise movements of muscles. The stimulus, or combinations of stimuli, are quite specific. It is this form of learning which makes it possible for the individual to behave automatically, or to perform an action when he wants to. However, it is important to recognize that the "wanting to" is not just a matter of general internal condition on the part of the organism; the response follows a specific stimulus situation. The chief distinction between this and the previous type, both of which are conditioned responses, is in the more precise, circumscribed character of the response system, as contrasted with the more generalized emotional responding of type one learning. Gagne specifies that most clearcut examples of type two learning are motor examples.

The third type he calls chaining, which, briefly, is a matter of connecting together in sequence two or more previously learned stimulus response associations. To bring type three learning about, the separate links in the chain must have been previously learned, and there must be some close connection in time and invariance in order when these responses are learned in sequence. A unique feature of chain learning is that previous well learned responses can be associated quite rapidly, indeed in a single trial. When the component portions of the chain are not well learned, then the chain itself may be acquired through repetition, which serves to force the learning of the components as well as their sequence in the chain.

Type four learning consists of verbal chains of the type three sort just described. Because this type of learning involves the use of words it is found only in human beings and proceeds most rapidly and efficiently when the individual has a rich store of associations with the component verbal elements in the sequences to be chained.

Type five learning consists in acquiring sets of multiple discriminations. The acquisition of many chains becomes difficult because of the experience known to all of us as forgetting. Basically, some process of interference in the acquisition of new chains, between the new chains and those previously learned appears to be the basic mechanism of forgetting. To make this type of learning efficient, retention must be made as complete as possible by making the stimuli as highly distinctive as possible.

Type six learning, concept learning, depends in a particular way upon verbal or symbolic representation, so peculiar to the human being. Through the use of words which specify *concepts*, the individual can literally manipulate his environment symbolically, think about it in many different ways. Concept learning consists in responding to stimuli in terms of abstract properties which are discriminated and by means of which stimuli may be classified into groups. The particular properties which identify the class must be discriminated in a variety of stimulus settings. Concepts are often attained rather gradually but once attained give the individual a powerful tool for further manipulation of his environment.

Type seven learning Gagne calls principle learning. A principle consists in a chain of two or more concepts or, if the term is preferred, a *relationship* between concepts. Again, being able to phrase the concepts and their relationship as a principle in words provides a powerful tool for manipulating the environment.

The final type of learning, type eight, Gagne calls problem solving. This type consists in the ability to combine principles one has learned into a greater variety of novel, higher order principles. Problem solving, then, consists of "thinking out" new principles which combines or relates previously learned principles. Through this procedure the applicability of principles is greatly enlarged.

Every investigator who tries to work with complex learnings commonly found in human experience, particularly in schools, faces a curious dilemma. He finds the precision of the laboratory and laboratory-based theories impossible to duplicate in the setting of his choice. He struggles with complex situations in which many variables may be unidentified, let alone controlled. He must deal with organisms who are not creatures of the moment; they bring to the learning task a variety of unspecified and uncontrolled histories of earlier learnings. Therefore, he often tends to talk in more general terms. These terms are less specifiable. If we think of them as concepts they belong to higher order classes in the hierarchy and do not lend themselves to rigorous conceptualization and research.

Unlike earlier psychologists who insist that all learning is fundamentally the same, Gagne takes the more radical position that each variety of learning ... "begins with a *different state of the organism* and ends with a *different capability for performance*." The peculiar advantage of Gagne's position is that within the behavioristic tradition it permits a specification of the hierarchy from problem solving down to stimulus response connection learning. This hierarchy makes a long step in recognizing the complexities of educational situations.

Possibly because of this basic difficulty with orthodox learning theories in psychology, there is some tendency in contemporary educational psychology to turn to theories of *teaching*.[23] In Gagne's terms, teaching consists in arranging the stimulus situation to maximize the conditions of learning appropriate to the readiness of the organism. This view of teaching puts the emphasis in learning theory on stimulus situations, it fits into Gagne's view of the importance of the conditions of learning, and it lends itself readily to the view of education as a technology, a view which is made quite explicit by Gagne. The psychology of teaching-learning, then, consists in specifying the conditions of stimulation which will elicit specified patterns of response expected.

Alternatives to Behavior Theory

We have noted that the "verbal behavior" group and to some extent Osgood, Mowrer and Gagne have found it necessary to modify simple S-R notions in order to deal with complex learning, especially language. Yet all of these persons remain in the behavioristic tradition. Problems with S-R concepts, despite their elegant simplicity, actually goes far back in time. Dewey pointed to an inadequacy in attacking the oversimplicity of the reflex arc, recognizing that the response may not be sharply separated from the stimulus. Woodworth recognized it when he proposed inserting "O" for organism in the S⟶R paradigm.

In the learning literature of the '30's the work of Tolman, used the term "cognitive maps" and emphasized the concept of implicit or "latent" learning, in an attempt to deal with the inadequacies, as he saw them, of a simple S-R approach to behavior modification. His work did not appeal to the S-R school as parsimonious and is now not frequently mentioned.[24] Tolman remained a behaviorist and thus he may be seen as a link between the viewpoints just reviewed and the position which may be roughly called "cognitive theory."

Prominent in the older non-behavioristic literature on learning was the work of the Gestalt psychologist Kohler, who introduced the concept of insight into learning theory. We have already noted that Gestalt theory faltered at the point of rigorously specifying its concepts and constructs outside the area of visual perception. Wheeler's developmental organismic psychology was subjected to even more devastating criticism and is no longer mentioned. Werner, likewise a developmental organismic psychologist, but of a distinctly different stamp from Wheeler, has suffered a kinder fate. Though severely criticized for vagueness of his concepts, his work on language and concept formation is increasingly being referred to, and several of his students are extending certain aspects of it. The trend in contemporary work on "cognitive theory" seems increasingly to incorporate the phenomena of language and the concepts of psycholinguistics, and of cybernetics or "feed-back" in its attack on concept formation, "meaning," "thought," and symbolic learning generally. Some attention was given earlier to the TOTE unit for behavior analysis provided by Miller, Galanter, and Pribram, which illustrates well how a behavioristic approach may become more flexible by incorporating "feed-back" concepts, while still maintaining desired rigor of formulation.

Thus, the empty "black box" seems to have some content. Whether the content is there because of native, built-in characteristics or because of previous patterns of learning and habits, previous perceptions, concepts learning sets, "feed-back circuits" or what not, it persists and cannot be ignored.

As we have pointed out, investigators and theorists who recognize the validity of the difficulty described here are handicapped by the very complex data situation and their inadequacy to specify it in precise terms. They fall back on rather vague and imprecise language and hence become subject to Deese's criticism: "In one sense good theories are easy to prove wrong, since they make clear and unequivocal predictions that are relatively easy to test; poor theories sometimes endure because they are so vaguely stated that it is impossible to prove them wrong."[25] Thus, few of the persistent objections raised to S-R formulations have gained ground.

However, inadequate the objections to S-R thinking may be from the viewpoint of science, one is nevertheless constrained to the position that at the present time a teacher, confronting a pupil or group of pupils, and wishing to establish conditions conducive to learning, is unable to specify precisely many of the responses he expects, nor to determine the state of the organisms themselves sufficiently to insure learning with anything like the precision required by prevalent learning theories. He is forced back to a more primitive level of general terms and general concepts which help him organize his approach, inadequate as it may be in some respects. He must continue for a time to labor at the broader and simpler levels of conceptualization.

In any event, he must start with description. This levels, or hierarchical approach is sometimes recommended, wherein one begins at a broad phenomenological level of experience-as-given. Working here, until he has fully described the phenomena, he may remove one level to empirical generalizations or principles. Working with these, he may in time infer relations at a still higher level of abstraction -- hypothetical concepts or theoretical constructs. Ultimately the scientist hopes to express these relationships in the pure symbolism of mathematics. Miller and his colleagues explicitly recognize this "levels" approach but believe that eventually all levels must be dealt with in the notion of an organized Plan.

Contemporary Cognitive Theory

Another view of this learning-teaching situation is found among those who believe that whatever the pattern of learning may be, a child develops a kind of cognitive style, or set of perceptual-conceptual habits, which become important in his complex learning. Cognition is the term applied to knowing, to understanding. It consists of sensing, perceiving, conceiving and thus responding in terms of organizations or structures which can be congruent or incongruent with stimulus conditions, in turn conceived as structures or organizations.

This approach is not averse to the term image. Stimuli acting on sense organs give rise to percepts. Recalled percepts are said to be images and are related to the modality prominent in a particular perception though indeed most perceptions combine two or more sensory modalities. When perception and imagery are coded by symbols such as in language, cognitive processes are greatly enhanced. Thus what we ordinarily call "thinking" consists in manipulating coded percepts, images and, what is more important, concepts. For a concepts to emerge, as we noted earlier, there must be discriminated properties common to objects or experiences which permit these objects or experiences to be grouped into certain classes. Concept formation may be said to be a blend of abstraction and generalization. In abstraction, features common to a class stand out strongly and characteristics which are variable among the objects are not noticed. In generalization, the concept becomes a kind of hypothesis which the observer proceeds to test by trying it out on fresh examples of the same class. Perhaps the most important contributor to this way of dealing with children's learning has been the Swiss psychologist Jean Piaget, recently rediscovered by American psychology after many years of neglect.[26] Piaget's work adds up to this: What we generally accept as thinking -- recognizing relationships, solving problems, making associations, are actually the end products of thinking. The concepts of space, time, weight, etc., which we take for granted are actually built up bit by bit, first slowly through the sensory and motor activities of the infant, and then more quickly through social relationships and use of language. Through this experience the brain builds up a background of organization which affects all later thinking and is essential if thinking is to occur at all. This viewpoint is distinctly developmental, recognizing that time is an essential dimension of the process. One is reminded of Gagne's behavioristic analysis, except that Gagne established a logical relationship among eight types of learning and did not particularly emphasize that the types might also be correlated with a time-developmental dimension.

While it is not possible here to explore Piaget's concepts in any complete sense, it may be of some value to sketch out certain key concepts to give the flavor of his approach to cognitive processes and functioning. Piaget makes extensive use of the idea of schema. A schema is first of all a cognitive structure. It is basically sensory-motor in character and refers to a class of similar action sequences. Each of these sequences is a tightly organized totality and the sequences which form a class have many properties in common. Piaget himself says "the schema as it appears to us constitutes a sort of sensory motor concept, or more broadly, the motor equivalent of a system of relations and classes."[27] Schemas are however not static but are dynamic in character. By a process of assimilation schemas absorb and integrate new experiences. By a process called accommodation schemas themselves are modified by new experiences or are reorganized into new schemas. These two processes of assimilation and accommodation come into balance or equilibrium and constitute an intellectual adaptation. These are the basic processes whereby cognitive organization is achieved. The development of cognitive function then proceeds through several reasonably well defined stages. The schemas organized in any one stage depends partly upon schemas organized at earlier stages; thus the process of organization is a dynamic and continuous one and the important processes of assimilation and accommodation reciprocal and likewise continuing.

These stages may be described very briefly as follows: From birth to 2 years, there develops a sensory motor intelligence in which the child's perceptions are disjointed, piecemeal and non-anticipatory. During these two years he gradually builds up a repertoire of actions and accumulates an experience of their effects so that by the end of the period he begins to show anticipation of the results of his actions before they occur. The period of pre-conceptual thought, from 2 to 4 years, is characterized by the development of notions of ideas which lie between the concept of an object and the concept of a class of objects. During the next stage, that of intuitive thought, from 4 to 7 years, there is an increase and refinement of this internalization of actions into thoughts. However, the notion of reversibility in thought, that is, the ability to return to the starting point, is still not attained and the child can grasp only one relationship at a time. It is only during the following stage, that of concrete operations, from 7 to 11 years, that the child begins to appreciate that actions can be carried out in thought and are themselves reversible. However, at this stage a child can only deal with the objects themselves and their relationships. The stage of formal operations is reached in early adolescence, from 11 to 15 years, at which time the individual no longer needs concrete material for his thinking. He has acquired a capacity for true abstract thought and he can reason by hypothesis, and the principles of logic.[28]

Among the many contemporary American psychologists who have been influenced by Piaget's thinking, probably the best known to educators is Jerome Bruner. He is well known for a number of widely acclaimed general statements on education, especially the education of young children. However, his program of research at Harvard's Center for Cognitive Studies deserves the close attention of all educators.[29] A body of evidence is accumulating, and a way of thinking about children's thinking, which promises to be extremely useful. While his viewpoint is developmental, it is far more than a simple developmentalism of unfolding. Development or growth "depends upon the mastery of techniques"; these techniques are not primarily the child's inventions or discoveries but are transmitted to him as skills from the culture. Yet there is a cumulative process, in which time is an essential ingredient, whereby the child becomes progressively capable of mastering more complex skills. This process goes hand in hand with a process of organization or integration, whereby the child can combine lower order skills into higher order ones, and combine information into larger and more complex units for solving problems "Maturation" says Bruner, "consists of an orchestration of these components into an integrated sequence." These sequences may be likened to the Plans of Miller, Galanter and Pribram.

Cognitive Representation

The crucial problem in learning, or "benefitting from contact with recurrent regularities in the environment," is to represent these regularities in some manner. In the language of computers, the information must be coded and processed so that it can readily be retrieved. Bruner speaks of representation as the end product of this system of coding and processing.

Representation occurs in three modes -- enactive, iconic and symbolic, to use Bruner's terms. Like many developmental processes they appear in a given order of stages, each stage or phase depending on, and growing out of, the previous one, and all processes persisting throughout life. As their designations suggest, these processes consist in representation of past events through motor responses, the selective organization of percepts and images, and the use of a symbol system which designates objects or events arbitrarily, and in terms of properties which may be observable (concrete) or inferential (abstract).

By ingenious experiments Bruner and his colleagues have shown that these three modes of representation do in fact exist, appear in the order indicated, and, as Piaget insists, each stage grows out of the previous stage. Very young children are excessively "stimulus bound," unable to replicate arrangements or designs except as directly presented.

Later, through motoric practice and skill in manipulating arrangements, they seem to form a schema or image which they can use successfully to represent a sequence of motor acts, in the absence of the original manipulanda which they have previously performed. Still later, they can reduce the sequences of acts and temporal-spatial arrangements of manipulanda, to symbolic formulae, transposing and recreating the sequences and arrangements quite freely.

In this process, as Bruner has dramatically shown, children at the second stage and possibly to some extent in the first stage, seem to be bound by the visual perception of the stimulus. What Piaget calls "conservation," the ability to observe visual transformations in objects and yet preserve the concept of equality in volume or mass, is greatly enhanced by symbolic (i.e., verbal) representation. In the second, or iconic, stage, children may solve problems of equality successfully when they use words (if available in their vocabularies) to substitute for the actual manipulations; direct observation of the actual manipulations may cause children to impute inequality to the transformation. Thus, the transition from iconic to symbolic representation may be a matter of gaining sufficient skill in forming concepts with symbols as well as breaking free from the overpowering effects of visual appearances.

The difference between the younger and older child, fundamentally, seems to be in the number of attributes of an object or situation to which they can attend simultaneously. This ability to hold several attributes in attention simultaneously and to attend to their inter-relations successfully, permits symbolizing abstract properties, as may be found in inter-relationships, and dealing with both the concrete and the abstract properties in the absence of the objects or events themselves.

The ability to discern and attent to properties permits classification of objects by these properties, noting the invariant properties in an assembly of objects and classifying them into a family.[30] Such is the process known in the earlier literature on concept formation as abstraction. It is this classification and arrangement of families into hierarchies of larger and more inclusive terms, which has been termed concept formation. As has long been noted, children attend first to perceptual properties, then to functional properties -- the uses of objects, in forming concepts. The use of functional properties seems first to reveal what Piaget calls childish egocentrism -- it is based on what "I" or "you" can do to objects rather on the customary use to which objects are put. Later, conventional usage becomes the primary base for functional classifications.

Not only is there a seeming decline in the child's dependence on perceptual ways of grouping objects and events, but there seems to be a clear development of an hierarchical strategy in so dealing with them. In this development language plays a very significant role. To quote Bruner:

> "Hierarchical classification is surely one of the most evident properties of the structure of language -- hierarchical grouping that goes beyond mere perceptual inclusion. Complexive structures of the kind described earlier are much more dominated by the sorts of associative principles by which the appearance of objects leads to their spontaneous grouping in terms of similarity or contiguity. As language becomes more internalized, more guiding as a set of rules for organizing events, there is a shift from the associative principles that operate in classical perceptual organization to the increasingly abstract rules for grouping events by the principles of inclusion, exclusion, and overlap, the most basic characteristics of any hierarchical system."[31]

Thus, concludes Bruner, cognitive growth consists in the regular development of systems or "technologies" of representation as a means of dealing with information. The young child uses learned motoric or action patterns, to represent his world. Then there is added the use of perceptual features to create images as representations. Finally, there is added a symbol system that can be manipulated according to regular rules and which permits the transformation of information quickly and efficiently. The end result is greatly increased power in problem solving, as the individual can handle larger and more complexly organized units of information. To return to Miller, Galanter and Pribram, elaborate Plans can be formulated and used in directing behavior and controlling experience.

In Bruner's words, "It is this new array of cognitive equipment that permits the child to transcent momentaneity, to integrate longer sequences of events." With respect to the basic psychological models appropriate for the study of cognitive processes, Bruner adds: "But the models that the growing child constructs seem not to be anticipatory, or inferential, or probabilistic-frequency models. They seem to be governed by rules that can more properly be called syntactical rather than associative." As a clincher, Bruner points out that in animal studies what seems to be necessary to keep an organized response going is a sustaining external stimulus. Hence a psychology of learning based on non-linguistic organisms has quite properly paid close attention to stimulus variables. This phenomenon is undoubtedly part of man's behavior repertoire also. But in man, the capacity for and development of symbolic functioning greatly extends his ability to transform and utilize information, going far beyond the enactive and symbolic modes of representation. In this process Bruner quite agrees with Piaget and with other students of child behavior who have emphasized "social learning"[32] that the process of learning (Bruner's term is "internalization") "depends upon interaction with others, upon the need to develop corresponding categories and transformations for communal action." In this view Bruner arrays himself with a distinguished group of sociologists and child development scholars going back to G.H. Mead[33], and with a newer group of students of language and child behavior, going back to the early Piaget,[34] who point out the uniquely socializing function of language.

Cognitive Structure

Bruner's famous statement, that "any subject can be taught effectively in some intellectually honest form to any child at any stage of development,"[35] must be understood in the light of his position outlined above. In the first place the statement was made as a "bold hypothesis," and it remains an hypothesis, though a probably sound one when correctly interpreted. In the second place, it does not assert that any child can learn any content, at whatever age; rather, it affirms that the foundations of a subject may be taught in some form at any age. Thus, because the child moves through the enactive, iconic, and symbolic stages in his cognitive development, the quantity of and amount of structure in the subject that can be taught will change with the cognitive modalities, and extent of their development available to him. Finally, the hypothesis is based on three assumptions: that knowledge has an inherent structure, that cognition may proceed intuitively or heuristically as well as analytically, and that an intuitive approach is more likely, at any age, to be congruent or consonant with the inherent structure of particular knowledge.

We are constrained to see that one may approach an experience at one level by an enactive mode, carrying out the movements which demonstrate a process, at another level by retaining an image based on perceptions of the process in symbolic form -- by words, or mathematical equations. Moreover, some learnings utilize one cognitive mode more than the others, regardless of one's developmental status. One's skill at golf may be learned enactively, and one may carry about certain images, primarily motoric and kinesthetic and perhaps to some extent visual, but a particular golf stroke is difficult to describe in words and probably has never been defined mathematically. Similarly, painting a picture involves the enactive mode to some extent, the iconic mode to a great extent, and submits to verbal statement somewhat more readily than does a motor skill. Learning to read a foreign language depends most heavily on symbolic coding, though also depending to some extent on imagery and enactment.

Some Problems for Art Education

What has all this to do with art education? The behavior theory position offers a number of problems to many art educators. In the first place, take the several positions on learning outlined early in this paper. Whether learning be conceptualized as how the response is elicited, or reinforced, or how the teacher arranges the learning (stimulus) situation, the response desired must be specified precisely and the stimulus situation used to evoke it must likewise be specified precisely. Under these circumstances education can become a technology. Important progress toward this end in certain skill and content learning has been made, and much more may be expected. May art be treated as technology? If so, appropriate precise definition, in the teaching situation, of stimulus and response must be made.

Assuredly a work of art may be a stimulus, arousing response in the beholder. Likewise, stimuli are necessary to give rise to behavior responses which create works of art. Thus far, however, the stimulus and response complexes involved in artistic behavior have not been broken down in the manner of contemporary behavior theory.

At least one interesting and ingenious attempt to write a behaviorist theory of art has been published.[36] Written more in the concepts of Hull than of Skinner, the author finds it necessary to make several philosophical assumptions about emotions, and about man's essential relationship to his environment, his "nature" as it were. All too often the behaviorist fails to recognize that he makes such assumptions; one of the very significant contributions of this article is that the author states his assumptions. Possibly he does so because he is professionally a philosopher, not a psychologist. Possibly for the same reason he introduces a number of concepts not ordinarily encountered in psychological discussions of learning or behavior theory, for example: "Beauty," left undefined, but responded to by the "all-well" signal, "aesthetic apprehension," defined as a fusion of feeling, thought and action; imagination, defined as analogical thinking; empathy, left undefined; and the concept of the artificial as opposed to the natural, and defined as a rearrangement of the natural so as to emphasize certain of its properties; the concept of configurations as involving "more" than the component elements. The author assumes that artistic reactions are phenomenological in character -- the reading of meanings by means of appearances. The purpose of art is said to be appreciation. He introduces the idea of self-conditioning based on "feed-back" concepts, and of an immanent "tremendous beauty" in nature which "we can hope to feel only so much as our limited sensibilities permit."

Thus the author is compelled to go well beyond the usual range of concepts employed by the behavior theorist to discuss art psychologically. Indeed, the present writer would affirm that apart from the use of the terms "conditioning," "stimulus," and "response" in their broadest sense, Feibelman's psychological analysis is not behavioristic, as the learning theorist conceives the organization of behavior.

A theory of representative drawing that is closer to contemporary learning theory has been presented by Alexander [37] who makes the basic assumption that children fundamentally enjoy, on a simple motoric basis, the activity of marking and scribbling. The visual effects of such marking is reinforcing, keeping the activity going. From the various simple forms which emerge, circumscribed by the nature of the hand and arm as a lever -- lines, wavy and straight, spirals, circles -- the child gains his basic "vocabulary" of forms out of which his first simple schemas are built. These schemas he develops from repeating his own forms and varying them, at first randomly, and later to distinguish patterns one from another, as much as may be. This distinctiveness makes the forms "codable," "easier to deal with cognitively." This is essentially a process of discrimination aided by adult criticism which requires "names" for the markings from the child, or supplies them gratuitously, and rewards successive approximations to "good from" by approval. Alexander also finds it necessary to postulate a "growing need to escape ambiguity." Likewise this need may be explained in social learning terms, but it also may be viewed as inevitable in growing up in a world of organized forms. Organization is given by precisely this process of differentiation; organized forms are those which are as strongly distinguished as possible from all alternative configurations."

This view is quite consonant with contemporary learning theory which holds that one does not achieve generalization; he achieves, rather, differentiation by finer and more precise discriminations. Differentiated material, strikingly different from all other material, will inevitably have a structure, an organization. Hence, we need think of integration only "as a natural result of differentiation, and organization as a residual effect of a process which generates the child's vocabulary of schemats." The principle of differentiation, of "forcing forms apart from one another," is the economical and sufficient principle.

Thus, there exists a fairly wide gap between contemporary behavior, or learning, theory in psychology, and there have been very few attempts to bridge it. The fact that the art educator may, of necessity, do research profitably with behavior at a different level of conceptualization does not necessarily invalidate his work or make his research unscientific. Behavior theorists have worked with intellectual models which are highly reductive, atomistic, and postulate a fundamental randomness in behavior. They seek to explain how order or organization is imposed on this randomness. The effort to reduce behavior to the principle of randomness reminds one a little of the situation of physics. At the sub-atomic level there is indeed randomness; yet the old principles of mechanics still hold in daily life. At our peril we park the car on a hill without cramping the wheels to the curb. When brakes fail, principles of the mechanics of mass, motion, gravity, and inertia take over. In the world of experience, the old principles are still valid and useful; yet the new principles, though not transcending the old, view the world of familiar experience in quite a different way. Because of man's control of sub-atomic events, all of us live in a world in which some new concepts are required, even though old concepts continue to be useful. Thus, the art educator may need to work with behavior psychologically and scientifically at a somewhat different level of phenomenology than does the psychological behavior theorist.

The requirement of scientific behavior theory to specify precisely stimuli and responses creates a second problem for the art educator. Although the term "creativity" has burgeoned recently in educational vocabularies, it has long been a fundamental word to the art educator. For at least a generation, his objective has been to enhance the growth and development of children through maximum freedom for self-expression, using a variety of media. With this philosophy, how does one specify precisely the response pattern that is to be expected, so that such patterns can be linked to the stimuli adequate to evoke them? In a day when the art class consisted in drawing from a model, using precisely specified techniques, one might expect the present paradigm to apply readily enough, but how precisely definable is the response pattern of creativity or self expression? A common definition of creativity involves novel recombinations of familiar elements, not to be defined in advance.

Students of child development have long emphasized three basic characteristics of the human organism -- that is, it is intensely concentrated on its environment, active and exploratory, that is invariably, at any moment of time, preferentially oriented to a particular class or classes of stimuli (goal seeking); and that it actively participates in constructing its effective environment, much of which is symbolic and, particularly, linguistic. A stimulus situation, no matter how carefully organized, may be irrelevant if the organism is not "tuned in" because of particular states of arousal, readiness, set, expectancy, or "need." Many terms have been used to specify in a general way this predisposing of the organism to particular classes of stimuli. The child development person recognizes fully the power of such a hierarchy of learning categories as defined by Gagne, but he is wary of reducing all complex learning to a "chaining" process. He recognizes the importance of the stimulus situation, but he also insists that the "black box" is far from empty. With Bruner, he would accept capacity as given by man's evolution, and with Bruner he would seek "the unlocking of capacity by techniques that come from exposure to the specialized environment of a culture."[38] But he would probably add, with Piaget and in keeping with Gagne, that capacity or potentiality is translated into ability over time and through experience, and thus is a changing, evolving, phenomenon.

With Bruner, he would agree that much of a child's significant environment is symbolic. Hence, many of the stimuli to behavior at any point come from "inside" the organism, from the continuing stimuli patterns of a symbolic character which the child has "interiorized" and carries around with him. In this sense, then, the child is an active agent, participating in the construction of his effective environment, for the symbolic stimuli adequate to elicit his responses are perceived in terms of, or through the screen of, the linguistic and other symbolic patterns, or "sets" which he has already built. To deal with this process, some complex mediational constructs seem to be required, whether those of modified behavior theory or of more outright cognitive theory.

In the third place, even though we may adopt cognitive theory concepts as somewhat more appropriate than behavior theory concepts for a psychological basis in art education research, we still face a problem. Which of Bruner's conceptual modes is most appropriate? It would seem that art is most probably heavily iconic, though drawing considerably on enactment and also on symbolizing, as defined by Bruner. Certainly one major function of art, whether in the act of creating, or in the experience of appreciating, is to convey meanings non-verbally. Some of these meanings are far from cognitive, being principally affective, or in the area of feeling and emotion. A recent paper on iconology[39] points out that levels of meaning generally inaccessible to words are available in graphic symbols. In iconology connotation is at a premium, and denotation is of little moment. This use of the term "symbol" is quite different from Bruner's use of the word and is not to be confused therewith. Rather, it signifies a "visual metaphor." Iconology, is, indeed, closer to the iconic mode of cognition; though a common meaning for an iconic symbol may emerge for many persons, that meeting will be general, vague, diffuse, with emotion, and freighted with private or idiosyncratic meanings for each person. In the paper referred to, Gombrich says that one of these symbols is called "more than a sign" just "because it is felt to be profoundly fitting." Note the use of the term felt.

Elsewhere[40] this same author has published a noteworthy article on the physiognomic perception in art, a term which Heinz Werner[41] introduced into child psychology to express a manner of cognition which partakes largely of Bruner's enactive mode, emphasizing tactual, kinesthetic, motoric, postural, and organic factors -- all non-verbal in character. As students of language have so clearly shown, meaning is a function of culture; the meanings of symbols as visual metaphors or non-verbal meanings, are undoubtedly products of culture also. Moreover, the relevance of such symbols rest on clusters of associations, many of them affective, rather than precise point-to-point association between symbol as specific S and meaning as specific R.

Nothing in this paper has been said of perception, a currently very important area of research in psychology. Space does not permit it, but the art educator would be probably better advised to pursue his psychological reading more along the line of perception research, as that process blends into the process of concept formation, than along the lines of contemporary behavior theory. Whether he is interested in research on the doing of art, or on the appreciation of art, the problem of perception is central. How does one give meaning to, encode, his sensory responses? Inevitably he does so in terms of his previous learnings. Inevitably, by the syntactics of experience, these previously encoded bits of information are classified -- related and organized in their storage. They are given meaning by their assignment to classes. What calls particular items up from storage? Again, a coded perception which is congruent with some previously stored item -- an item relegated to an organized, hierarchical system of concepts.

Finally, we must recognize that art, like language, is uniquely human as it functions to convey meaning. Beauty is constructed by many plant and other animal forms, but only in man does the construction of aesthetic form serve the purposes of feeling, perception and cognition, and only in man is beauty conceived as such and as an end in itself. Any psychology of art or esthetics will probably rest ultimately on some theory of equivalence between objects on the one hand and ideas and feelings on the other. This theory must in all probability accommodate mediational constructs, stimuli conceived as complex and symbolic and transmitted by all sensory modalities, and responses likewise conceived of as complex and symbolic as well as muscle movements and glandular secretions. While certain behavior theories in vogue today do not accomplish this complex task, there is reason to believe theory now under construction, and including concepts from perception and from information processing research may make progress toward this goal.

By way of conclusion, we will present a series of statements, some factual, some dogmatic, some valuational. Some of the statements will reiterate and summarize the content presented; some will be propositions which follow from this content and should serve as departures for lively discussion:

1. Most contemporary students of learning are convinced that however complex the situation or process may appear, learning is essentially a very simple process, though the statement of its general laws may not be available for some time.

2. Most current behavioristic theories of learning are not immediately translatable in terms of the complex behavior required of the classroom situation.

3. Where stimulus and response can each be specified quite precisely in behavioral terms, a technology of learning, based on behavior theory, seems possible and promising. Such a technology will be very useful with skill and informational learning. Even with this material, however, there is some evidence that the introduction of ambiguity, requiring orienting or search behavior, may facilitate learning.

4. There is considerable suggestion that with the complex human learning required, in the classroom, which involves symbolic transformations, some type of mediational theory will be required. At the moment, models of learning processes involving the "feed-back loop" concepts of electronic computer seem promising, at least heuristically.

5. Most mediational attempts thus far have been developed with verbal symbols (language, written or spoken). There seems to be merit in considering non-verbal mediators also, such as "images," and which may incorporate other perceptual modes than vision and audition.

6. It is difficult to escape the idea that the non-verbal mediators just mentioned, as well as concepts of "coding," "meaning" and concept formation will be required to discuss, psychologically, the processes of art production and consumption.

7. Developmental ideas, that simple learning mechanisms precede more complex mechanisms ontogenetically, and that simple content and limited organization are necessary preparation for more complex content and organization, should be useful in art education.

8. A "levels of phenomena" approach, each with its own principles and "laws," may be useful. A "levels" approach which admits of discontinuities between levels may be of some value pragmatically and empirically. The logic and philosophy of science, however, would argue that ultimately these discontinuities must be bridged.

9. Such an articulated series of levels has recently been formulated by Gagne, who has also supplied a framework to link his levels conceptually. The idea of a levels approach has also been suggested by Miller, Galanter and Pribram; they have supplied a construct (the TOTE unit) which can be used to order hierarchically the learning of quite complex behaviors or contents. Neither of these theoretical constructions, however, has as yet been used as a basis for constructing experiments in complex human learning.

10. Points number 5 and 6 above suggest the ingredients of cognitive theory. The most comprehensive such theory, construed within a developmental framework, incorporating essential ideas of perception, concept formation, and yielding a theory of intelligence as an evolved structure, has been advanced by Jean Piaget. His ideas of schemas, the child's mastery of spatial concepts, and the fusion of visual and other sensory modes are the potentially great values to art education.

11. Art education is necessarily concerned with non-verbal material. While for some time art education has focussed upon processes of personality development, it nevertheless deals with a cognitive, symbolic content. Its cognitive mode or modes must incorporate affect and its effect on intellectual as well as personality organization.

12. Bruner's use of Piaget's ideas in research are imaginative and challenging, and his concepts of the enactive, iconic, and symbolic cognitive modes suggestive. His

concentration on verbal coding should be of great significance for education, but for art education the further development of his ideas concerning the iconic mode may be most useful.

13. Whatever learning theory, behavioral or cognitive, may appeal, there is the undeniable evidence from developmental psychology that the organization of a complex behavior occurs in sequences, and requires time. The teacher particularly needs to know, through observation or personal recollection, how much time is required to establish the adult's well-learned concepts which he takes for granted as "intuitive" or self-evident. Piaget's work has demonstrated that such "intuitive" ideas of space, time, number, and causality are in each instance the products of 12 to 15 years of continuing experience with manipulables of the every-day environment. The literature on children's graphic art amply confirms the importance of frequent practice with materials over a period of many years.

14. There is growing awareness in both psychology and education that improverishment in sensory and perceptual experiences in the early years retards and may even permanently limit the development of cognitive structures and thus truncate potentiality. This limitation is affected by attenuating the internal, symbolic stimulus complexes the individual carries around with him and which operate effectively to screen him from new stimulus situations, however effectively they may be designed. Conversely, richly developed internal symbolic stimulus complexes may sensitize the individual so that maximal use may be made of new stimulus situations. This limitation or facilitation may well have a cumulative effect. Thus children may inevitably react quite differently to the most carefully designed teaching.

15. Any research programs in art education, however psychological or scientific, must be based on clearly formulated objectives. Art educator's objectives, like any educational objectives, will not emerge from research or scientific analysis. Objectives are essentially valuational and are formulated in a different universe of discourse from the data language and methodology of science.

16. The psychologist must leave to the art educator the final judgment as to the value of a particular theory or model of learning or behavior change he would adopt, for research or training purposes. The art educator's objectives, his media and materials, and particularly how finely or coarsely he wishes to describe the behavior responses or products he desires, and the stimulus situations he creates, all must be taken into account in his adoption of a psychological model.

This writer would say, finally, that perhaps the field of art education should think twice before it asks for certainty with respect to a learning theory. Art education has long, and possibly very correctly, insisted on a degree of ambiguity in its stimulus situation. There is some evidence that ambiguity in the stimulus situation is necessary to efficient learning, especially in complex material. There is also much to suggest that what may occur in an automated learning cubicle, based on the most elegant learning theory available, is only a small part of the total educational process, however important that part may be. There is still the interpersonal relationship -- child-child, and child-adult, including the teacher -- which thus far cannot be replicated in the self-teaching situation. Art education has long looked to the individual, and to the expressive features of its media in constructing its curricula; many art teachers have utilized the child-child relationship in planning and executing group projects. Many teachers, however, have been wary of imposing techniques or styles with particular media lest expressive individuality or creativity be violated. Possibly more attention should be given to the function of teacher as stimulus, as well as to the possibilities of media and materials.

LIST OF REFERENCES

1. J. E. Anderson, "Dynamics of development: systems in process," pp. 25-46 in D. B. Harris (ed.), The Concept of Development. Minneapolis: The University of Minnesota Press, 1957.

2. F. J. McDonald, "The Influence of Learning Theories on Education." Chapter 1 in E.R. Hilgard (ed.), Part I, 63rd Yearbook of the National Society for the Study of Education. Chicago: The University of Chicago Press, 1964.

3. The first part of this paper draws heavily on an earlier publication of the present author, "Development and Learning: new directions and their implications." Proceedings of the New York State Convocation on Educational Research, Albany, State Education Department, 1962. See also the excellent account by F.J. McDonald, Op.cit.

4. Lawrence Cremin, The Transformation of the School. New York: Knopf, 1961.

5. Lawrence Cremin. Op. cit.

6. Two other exceptions, significantly enough, are in educational rather than academic psychology: B.R. Bugelski, The Psychology of Learning Applied to Teaching. Indianapolis: Bobbs-Merril, 1964, and J.S. Stephens, The Psychology of Classroom Learning. New York: Holt, Rinehart and Winston, 1965. These two books recognize the increased interest in the psychology of learning evidenced in education in the last six or eight years.

7. K.W. Spence, "The Relation of Learning Theory to the Technology of Education." Harvard Educational Review, 29, 1959, 84-95.

8. B.F. Skinner, The Behavior of Organisms. New York: Appleton, 1938.

9. B.F. Skinner, Verbal Behavior. New York: Appleton, 1958.

10. A.W. Staats and Carolyn K. Staats, Complex Human Behavior. New York: Holt, Rinehart and Winston, 1963.

11. Norman A. Crowder, "On the differences between linear and intrinsic programming." In Programs, Teachers, and Machines, Alfred de Grazia & David A. Sohn (eds.), Bantom Books, pp. 77-85.

12. W.K. Estes, "Theory of learning with constant, variable, or contingent probabilities of reinforcement." Psychometrik, 1957, 22, 113-132.

13. __________, "Of models and man." Amer. Psychologist, 1957, 12.

14. C.E. Osgood, Method and Theory in Experimental Psychology. New York: Oxford University Press, 1953.

15. __________, "Studies on the generality of affective meaning systems." American Psychologist, 17, 1962.

16. E.g., J.S. Bruner, "The course of cognitive growth." American Psychologist, 19, 1964, 1-15.

17. O.H. Mowrer, Learning Theory and Behavior. New York: Wiley, 1960.

18. __________, Learning Theory and the Symbolic Processes. New York: Wiley, 1960.

19. C.A. Miller, E. Galanter and K.H. Pribram, Plans and the Structure of Behavior. New York: Henry Holt, 1960.

20. The reader is referred to the original reference for illustrative diagrams of various degrees of complexity.

21. O.H. Mowrer, Op. cit., 1960, a,b.

22. R.M Gagne, The Conditions of Learning. New York: Holt, Rinehart & Winston, 1965.

23. See N.L. Gage, "Theories of teaching." Chapter II in E.R. Hilgard (ed.), Theories of Learning and Instruction. Part I of the 63rd Yearbook of the National Society for the Study of Education. Chicago: University of Chicago Press, 1964.

24. Two critics in a review of pertinent literature, have this to say: "... it seems safe to say that the current state of the evidence is at least encouraging to the theorist oriented to some form of expectancy theory. We were, frankly, somewhat more impressed by the overall trend of the evidence than we had expected to be." (p.213). K. MacCorquodale and P.E. Meehl "Edward C. Tolman" in W.K. Estes, et al. Modern Learning Theory. New York: Appleton-Century-Crofts, 1954.

25. James Deese, The Psychology of Learning. New York: McGraw-Hill, 1958.

26. For a succinct summary of Piaget's prodigious writings, see J.H. Flavell, The Developmental Psychology of Jean Piaget. Princeton, N.J.: D.VanNostrand, 1963.

27. J. Piaget, The Origins of Intelligence in Children. New York: International Universities Press, 1952. p. 385.

28. In his Children's Drawings as Measures of Intellectual Maturity. New York: Harcourt, Brace & World, 1963, the present writer has advanced the idea that children's drawings express their "intelligence" in terms of emerging concepts of increasing complexity. Intelligence can be measured rather successfully by analysis of the drawing of a man or woman between the ages of 4 or 5 and 12 to 14; this period fits rather neatly into Piaget's stage of concrete operations. The writer would refer to this period as the period of object concepts and their manipulation.

29. One of the best summaries of the work presently available appears by J.S. Bruner in the American Psychologist, 19, 1964 1-15.

30. For a penetrating discussion of this process, see Roger Brown, Words and Things. Glencoe, Illinois: The Free Press, 1958.

31. J.S. Bruner, "Course of cognitive growth," American Psychologist, 19, 1964, p.11.

32. E.g., A. Bandura & R.H. Walters, Social Learning and Personality Development. New York: Holt, Rinehart & Winston, 1963.

33. G.H. Mead, In C.W. Morris (ed.), Mind, Self, and Society. Chicago: University of Chicago Press, 1934.

34. J. Piaget, The Language and Thought of the Child. New York: Harcourt, Brace, 1926.

35. J.S. Bruner, The Process of Education. Cambridge: Harvard Univ. Press, 1961.

36. J.K. Feibelman, "A Behaviorist Theory of Art," British Journal of Aesthetics, 3, 1963, 3-14.

37. Christopher Alexander, "The origin of creative power in children," British Journal of Aesthetics, 2, 1962, 207-226.

38. J.S. Bruner, Op. cit., 1964.

39. E.H. Gombrich, "The use of art for the study of symbols," American Psychologist, 1965, 34-50.

40. On physiognomic perception, pp. 232-245 in Gyorgy Kepes (ed.), The Visual Arts Today. Middletown, Connecticut: Wesleyan University Press, 1960.

41. H. Werner, Comparative Psychology of Mental Development, (rev. ed.), Chicago: Follett, 1948.

EXCERPTS FROM THE DISCUSSION WITH MR. HARRIS

Audience: Professor Harris, you say that objectives are essentially evaluational, and I think Professor Tumin this morning made the same kind of comment. Art education objectives like any educational objectives will not emerge from the search for scientific analysis. My question is on what basis do we select desired goals, if we do not make it on a basis of a reasonably scientific, or reasonably empirical assessment?

Mr. Harris: That's right. You may use research to clarify, to throw light on, but essentially what you choose to call desirable or undesirable will not emerge from scientific experiment. This is a judgment which you place on it as a human being, and you draw on, I would say, the humanities, philosophy--these disciplines, a different universe of discourse. I am over-simplifying it. It's like the old argument--can you derive a morality from science? I don't think you can. Ultimately, you have to place a judgment on the date that you assemble. This may be informative, but your judgment derives from a different universe of discourse than from the data.

Audience: May I continue for just one moment. I understand that the judgment you are making is a question of value decision, but I fail to see how you can possibly not use the word history ultimately. Ultimately all our values derive from history. We have a tradition which we can look at empirically as to what kinds of human behavior or natural behavior have been beneficial or harmful to the human race. This seems to me to be ultimately--using your word--a scientific problem rather than merely a judgmental problem which we make in vacuum.

Mr. Harris: This is getting into deep water. I have looked at the problem of historiography from just this point of view because I have been curious about it; and I find a tremendous debate that rages in the field of history over what is evidence, and I'm not sure I am correct, but I suspect that most historians now at least say history is the way a particular historian presents, organizes certain records, and that this may be seen quite differently by another historian, and be presented quite differently. So, here again I find a problem of what is truth. You see, judgment again has to be made. The historian himself makes the judgment in his assembly and orientation and organization of information, presumably, a matter of record.

Audience: Suppose you were confronted with the task of addressing yourself to the problem of theories of instruction. What kind of phenomena would be of interest to you?

Mr. Harris: Well, I must betray my intellectual antecedents. I would be interested, for example, in what are good teachers, who are acknowledged to be good teachers, evaluational judgment, what do they do? I would want to start at a descriptive level, rather than start with a theory. I would start with some observations of behavior.

Audience: That has been precisely the area of behavior that has been investigated most and with least fruitful outcomes.

Mr. Harris: I agree.

Audience: There are some very, very interesting results. Are you aware of them? The warm, friendly teacher is usually the best one.

Audience: Not necessarily.

Audience: The reason I am pushing this is because I am curious to know how it is, for example, educators whose primary social charge is to deliberately and systematically bring about certain values in the society, should seem to be so unconcerned with investigating those controls which indeed would affect the outcomes.

Audience: You can't see the relationship between learning and theory. What use can you make of learning theory? If you can't answer my first question, maybe you can answer my second one. What do I do with learning theory, let's suppose that I am reasonably well informed with your kind of theory--what must I do with that as a teacher?

Mr. Harris: Well, I tried to imply, darn little, because behavior theory as it is presently constituted doesn't address itself to the order of phenomena with which you have to work. It hasn't since the mid-thirties, and by the late thirties it was evident that there was so much contradiction about retroactive inhibition, etc, that psychologists, that is academic psychologists, gave it up. An academic psychologist of my acquaintance recently jumped all over an educational psychologist for not using contemporary learning theory in the classroom. I'll be darned if I know how he could. It is so fragmented, you see; and I taxed him with this, my colleague, who was jumping on this educational psychologist on this score; and he said, "Maybe it can't be done, but they ought to try". That was his argument--they ought to try.

Audience: Inasmuch as I am about to embark on a research project dealing with the determination and hopefully the enrichment of children's aesthetic concepts, I wish you would elaborate on what use I can make of the literature on verbal learning and conceptual formations.

Mr. Harris: Concept formation is as I conceive it at least an ordering of ideas into hierarchies, that is, and here I depart a little from contemporary behavior theory, learning theory, certainly, that is it's seeing a number of objects at the simplest level and noting the invariant properties of those objects. What is a book, for example? Must it always have hard covers? Is that an invariant property? What about paperbacks? Do they fit the category or not, you see? So what you came out with is a set of hierarchies of objects, paper, bundles of paper stapled together, magazines, books, hard and soft cover, perhaps two subheads, you get an hierarchy of concepts, and then you find a new object that comes into your experience; and you treat this as an hypothesis, and you see which of the categories it seems to fit and you give it a name. A child does this all the time, when he learns language. He sees, he has an acquaintance, with a four-legged creature called a dog. He sees a horse, and he says, "big doggie". Now this is an error, but I think it is a tremendously significant error. He has made two generalizations. He has assigned it to the category of four-legged creatures he knows and he conceptualized the big-little difference, which is quite a step at the age of two when he uses this expression, "Big doggy". Mother says, "No, that is a horse". You see, here is where the behavior theory seems to me breaks down. Rarely do you have to reinforce that learning. One trial is enough. Whereas, Skinner's behavior theory says that learning is acquired through a gradient of reenforcement over time, and you would have to do a lot of correcting by Skinner's method, it would take forever to learn to read, you see.

Audience: Is it possible, do you think, in the field of aesthetics or the field of art education, that there is similarity to what is believed in some other disciplines, to the belief that children are capable of highly advanced or perhaps profound concepts of the types of things you are discussing, which perhaps are more important basically than the details?

Mr. Harris: There is a bit of debate at this point, and I'll give you my own belief about it, my own feeling about it. It is more of a feeling than anything. There is a notion if you take the Skinner approach that anything can be learned if you just keep up the process of reenforcement often enough and provide the feedback adequately to the organism. Conversely or set over against this is Piaget's notion that you must organize intellectual content into a structure and that this structure is built of more and more complex structures, and builds into more and more complex structures, and that time itself is a dimension of this--that you can't do it simply by a process of foreseeding; but that there is a general, using very vague terms, and this is why the cognitive theorists get in trouble with the behaviorists, they use vague terms like soaking up or building up or enlarging, instead of specifying, precisely--through a process of incretion of experience over time which you simply can't forseed. You have to build breadth as well as depth and height in this hierarchy. I would go along with Piaget here to the extent that the rudiments of aesthetic appreciation are seen as early as about four or five where a child distinguishes the concept "prettier than" and can apply this, but I would suggest that it is going to take another ten to fifteen years to bring this to fruition where you can get the more advanced elements of aesthetics, whatever you choose to put into those elements, harmony, design, balance, etc., complex relationships among parts, because it is very clear from Piaget's work, clear to me at least, that the intermediate stage roughly from seven to eleven or twelve of concrete operations, as he calls it, does not permit the emergence of these high-order abstractions, which I believe are necessary for a full development of what you would call aesthetic appreciation. Sure, there is a growing all the way along and a building or readiness and an enlarging of the appreciation all the way along, but you can't get it to its full fruition until in adolescence. This, Piaget would have us believe, and I would go along with Piaget.

Audience: May I ask what is meant by an aesthetic concept.

Mr. Harris: That's a good one. This has come up now in the past day and a half--arguments over terms. As long as we stay at very broad levels of generalization, we agree; and then if we start pinning these down to referents we get into trouble; and ultimately if we are going to do research, as pointed out by Dr. Tumin this morning, we have got to get down to some of these operational levels. Here I am forced to be a behaviorist whether I like it or not.

Audience: Since you are down at that level, could you tell what you might consider in your experience with viewing children doing say a sequence of drawings on the same subject, what learning characteristics might be and not only in the product but in the child?

Mr. Harris: I have had very little experience with the experimental situation that you described of sequencing systematically over time. I hope to do that this winter. Let me talk to you next April. I am going to have an opportunity to work with children who have not had any pictorial experience whatsoever, no books, no pencils.

Audience: You make a concession to us as art educators working on a more molar level of description and experimentation. Has psychology pretty well committed itself, behavioral psychology, to this assumption of reduction into simple units? If so, how do they see their way out of the complexity of these chains, etc.? Are these supposed to become bigger structural units of some type? Is this the hope? I wonder how they handle these organizational problems or is it possible, as I understand to a degree is happening in life sciences, that there are structural levels within a discipline and perhaps the model of psysics isn't any more viable. I don't know if this is true or not. I've just heard this debated at times.

Mr. Harris: The psychologist has got out of this issue pretty consistently. He just says, "Well, I hope some day we can put this all together, but that's a long time in the future. Don't bother me with it now." All except the cognitive theorists, like Bruner, Piaget, or Miller, who is working in linguistics, psycholinguistics. He hits at this right directly, and says this is just a lot of nonsense, this reductionism. He is willing to work at a molar level and to work with empirical laws, even though they don't resolve themselves ultimately into mathematical equations, which is the goal of the psychologist. I would say this--I'm safe because there are only one or two colleagues in the room. I remember an address by Robert Oppenheimer to the American Psychological Association just about eight years ago in which he just laid us on the block. He said we were working with a mid-nineteenth century model of physics as our model and we simply hadn't wakened up to that fact yet; and he pled with us to use analogy, to use gross concepts, and he did all these things that are dear to my heart; and yet, it is not being done. I didn't say in my paper that psychologists discovered Bridgman's paper, the first paper, in the mid-thirties. They haven't discovered yet his latest one, the book he wrote shortly before he died; and if they do, some will think it was only senility that gave rise to it. It is entitled "The Way Things Are." He says essentially just this, "This is the way things are". That is, everything reduces eventually, all instrumentation, all measurement, reduces to the "human mind", you, as the reader of the instrument, and that there is essentially a subjective personal or psychological element in all reality. He comes out almost to the Platonic view.

Audience: One of the important ideas of learning to aesthetically appreciate something is the fact that anything can be looked at as an aesthetic object. I hope the context will make that clear. You could look at it the way Mr. Rosenberg would look at it instead of the way a scientist might look at it. But an elementary child, say in Piaget's intuitive stage of concrete operations, can he grasp that idea by working with concrete materials? Could it be looked at as an aesthetic object rather than as a physical object? Now this is debated by the discipline, can we teach this basic idea to an elementary child?

Mr. Harris: You can lay the ground work for it. I don't know, again I would take refuge in the fact that a seven year old does not have the capacity to form the same abstract levels of appreciation nor to make the same descriminations of whatever makes this aesthetic, as does an adult; but you can lay the foundations. Now, for example, some of you have seen that little book, Child Artist of the Australian Bush, and it is a controversial book, but I have at least accepted it as a valid report, for my own. The thing that interests me is that an untrained teacher gave the youngsters materials to work with. The inspector came along about once every six weeks, and he knew something about art and would give them some help with technique but the teacher emphasized looking around you, examining objects, feeling things, and there was a great deal of exploration. Now the children did realistic drawings; but their use of color was something other than just reproductive. It was "imaginative"; and where this comes from I don't know, but I do feel that the handling, the feeling, the pointing out of differences among objects which the teacher encouraged on their field trips has some value. At least, I think so.

Audience: I would like to say something about that because it came up also in the earlier talks today. I think what is going on is two completely unrelated forms of discourse here. For example, in your discussion, your elements are the child, with his sensory and mental apparatus and nature, and the equation is stopped right there. Now the other thing you are talking about is the presence of a Western Tradition in art. If you take some of the children that Piaget examined they probably were surrounded by art objects; and this would not be true in any tribal community in which there isn't such a thing as art but all objects have some aesthetic character. Now, we have in a sense a completely different situation here. We start out by being surrounded by what we call "bad art"; that is, the whole landscape is practically an immense non-art museum of "bad art", and what we are talking about at this conference is how you teach art. Now you are not going to teach art by having methods, as I think you have in mind, by having methods deduce from learning psychology.

Somewhere in this you have got to introduce some identity of art. This is the one thing I think we have been missing. That is, how do you introduce the Western tradition of art? Painting and sculpture, in other words, into this thing that you are trying to teach? This morning I heard a lot about training perception, and that children can have an idea that blue and red are very nice when put together or they are not very nice when put together, and you can talk about showing the difference between one style of furniture and another. You can go on doing this forever and you finally wind up with people who will know how to buy a dress that is becoming; but you will never get to art. Now, how you are going to make that leap is I think the big problem of this conference. How you are ever going to get to your subject, in other words.

Audience: This is the same problem that I brought up prior to this. I said what we really ought to be doing is to arrive at an understanding of what we mean when we say art.

Audience: I'll be glad to do that for you. It's a very simple problem. When we talk about art we mean the history of western art as it has come down through the twentieth century and right down to today. Fortunately, this western art is no longer merely western art. It has begun to draw on all kinds of primitive sources--Oceanic art, African art, Indian art, Hawaiian, Japanese, Chinese--so we are talking about world art as art; and this is defined historically, it's not an impossible question. In other words, we do not have to say what is the essence of art. That's not the problem at all. That's the problem of aesthetics. It has nothing to do with our problem, because we know exactly what art is. Art galleries and museums, and anything else. Nothing to argue about.

Audience: I think somebody, perhaps it was Taylor yesterday, made a very definite distinction that there are many things that can be learned without performing them; and I am very glad that Professor Harris is pointing out that you start by exposing the children to the phenomena that you have in mind. Now what I am making words about is let's be sure that those phenomena are art, good and bad, (particularly if they are good, I don't know how far you have to go to the bad) in one form or another at a very early age. Just what that age is, I don't know; but I think you people ought to be able to figure it out.

Mr. Harris: Well, my feeling is that you have that material around as early as possible. Now what you can do in pointing out wherein it is good will depend on the level of intellectual, cognitive capacity that the child will bring to it. I think growing up in this kind of, well, a child psychologist of an older school of which I belong talks about bringing a youngster up in a particular "stream of stimulation"; and I would like to see this stream of stimulation start early and continue on.

Audience: That's a very good term, by the way; but I think what we are trying to do is simply reproduce the conditions, reproduce in present conditions, the kind of thing that used to be called a cultural background. In other words, in the right kind of middle class European household, there were books, pictures, music, going to a theater, etc., trying to intentionalize this thing and figure out how you can do it and give it some more precise terminology like "stream of stimulation".

Audience: There seems to be two main streams of interest here, all being held by the same people; and reflecting two main streams of interest in the history of art education, as little as I know about it. What is the teaching of art? I don't want to put it aside, just hold it there for a moment. And the other is the use of almost anything in any way by people who have been exposed to the world of art for the kinds of experiences that some types might call art, but are other experiences as well.

Audience: No, there is nothing that can be produced as an experience which is equivalent to a work of art, and I would like to explain to you why. An experience of a work of art involves the knowledge of it as art and its relation to other works of art. If you look at a mountainside and you say, "That looks exactly like a Cezanne", you are not getting an experience of art.

Audience: Would you say that all the experiences of art are totally exclusive of all other ranges of experiences?

Audience: No, on the contrary. There is no way of getting the experience of art except from a work of art. When you get the experience of art, it does not exclude other kinds of experience.

Audience: You say there is no way of getting the experience of art except through a work of art. Of all the things you would call the experience of art, are they that totally exclusive that you can't get them elsewhere?

Audience: That's right. You cannot get it elsewhere. You can't get the experience of a symphony by hearing the wind blow.

Audience: Suppose you were interested in having that portion of the experience of art which is called the free-flow of imagination and spontaneous involvement.

Audience: You are on very dangerous ground. You are going to get some LSD now. You don't get the experience of art from anything but art; and even though it may have characteristics that can also be discovered in nature, it will have something else which you cannot get that way. We have to keep in mind that we all have our own naturalistic idea about art and it takes even artists a long time to work their way out of the idea that a work of art is a picture of something that you find in nature. We have even an eminent art historian that can't get away from the idea that when you look at a Jackson Pollock you are really looking at a painting of the woods. This is the belief that there is in nature, and within the human being psychologically an equivalent to a work of art which the child, or the monkey, or whoever, is going to get out by expression. Now this is not the case because a work of art is related to a historical complex which is art that exists there as a result of thousands of years of enterprise by artists.

Now this is the one thing we mean when we say that it is important to study art. We mean it is important to teach that experience of man, it's like studying history, or anything else, in which man has been involved. Now man has been involved in creative activity since the cave and that's what we are talking about--that this tradition has been extended right down to today, and everybody is able potentially to participate in it. So let's never try to mix this up with visual perception, woods, trees, or some other thing that is not art. We are either talking about this or we are not talking about art. We can have art in psychology or self stimulation or Pied-Piperism. I think it's art we are talking about, but maybe I am wrong in this case.

Audience: Doesn't the way in which we conceive of instructional material have to do somewhat with the way in which we conceive it is learned. There was a gentleman from Harvard who came to Chicago and told the story about two students who went to Skinner and said that they had a roommate, a big husky fellow, who didn't appreciate art; and they wanted to make an art lover out of him; and they were going to Skinner to find out how they could make an art lover out of this big, husky football player who was insensitive to art. Skinner said, "Well, get a great painting and hang it in the room. Every time the fellow looks at the painting, talk with him, about anything. It doesn't matter. Just talk with him. When he stops looking at the painting, stop talking to him. Talk with him as long as he looks at the painting". Lo and behold, they rented a painting and they hung it up; and every time he looked at the painting, they talked with him; when he took his eyes off the painting, they stopped talking to him. Well the rental period came to a close, and they had to return the painting. They returned the painting, and this guy was walking around the room in silence. Finally he said, "Fellows, couldn't we go over to the art museum. I'd like to talk".

Mr. Harris: Precisely. A very good story.

Audience: There's been a lot of talk recently about the differences between reception learning and discovery learning; and I am just wondering in considering how we might approach, let's say art in the elementary school, as to whether you feel one is more likely to be useful than the other or perhaps both might be used, etc.?

Mr. Harris: My own feeling is that this is a kind of rediscovery of an older distinction, and it has just come back with us again; but actually we use both techniques. Sometimes one, sometimes the other. There is an element of both involved. I would think even in art education as I understand it in the elementary school. There are certain things that you impart directly; there are certain things the youngster discovers through manipulation-exploration of material. I don't know if one or the other is exclusive here.

Audience: Do you think that it might be possible, for example, let's say the first two or three grade levels, perhaps, that discovery learning might be better, than, let's say, at Piaget's second level?

Mr. Harris: If Gagne's is right and you can arrange learning, different kinds of learning, in hierarchy, yes. The motoric, the exploratory, the discovery elements are earlier ontogenetically, in a sense that the individual has to build a "vocabulary" of ideas and concepts; and there is no question but that a lot of this is discovery. Any children learning to talk show this all the time. They try experiments with words, and they are corrected and they discover whether they work or not, you see. Later on as youngsters get up to higher levels of abstractions, they can learn principles and concepts directly; and I think in this case, well, it is kind of like the old argument--is learning deductive or inductive? --and it is both, except that the weight of evidence seems to suggest that the younger child is a little more inductive, relative to the deductive; whereas the older child leans more and more heavily on deductive, because of the very nature of the processes and the nature of his own intellectual structure that he builds through time. It's both from the early days, but it is perhaps a shift in the center of gravity over time.

Audience: I would like to state that what you said has an absolute connection to art education, contrary to my colleague Harold Rosenberg's view. I think this is because many of your predecessors and some of your contemporaries have held the view to sort of hold off whole things like works of art, like paintings by real artists, like say, Matisse, until the child is older and is ready for that; hence you begin with color, line, texture, so called, but really unidentifiable inseparable, elements of art, until they are in their teens or early adulthood, at which time this "non-art museum" Rosenberg so aptly described has got them to the point where they are not able to absorb it at all; so the whole thing was in vain. I think it is great that people like yourself have come to the conclusion which has been held by many art educators for a number of years, to immediately begin with the whole thing, in its totality. Even that perhaps even though you can't even rationalize what you are getting from the work, let alone verbalize it, you may be getting it in its entirety.

Mr. Harris: Yes, and over time I would say this, the youngster in viewing this, whatever it is, work of art discriminates more and more elements in it, more and more parts of it, more and more qualities, if you prefer that word, as he grows older and becomes--yes that's right. It's perceived as a unity from the start, but as a relatively more global, undifferentiated unity, I would argue.

Audience: Would you say, in the processes of differentiation that you have talked about from one time to another, there might be an hierarchy of value in these processes if carefully examined that would give us a concept of what we mean by learning in art if we start as you suggest, with the whole and with experiences, art experiences, as well as others, and if we find some kinds of processes which differentiate and characterize art learning, at least up to adolescence.

Mr. Harris: If I understand correctly, I would say, yes. There is a process of differentiation in the sense that the individual discriminates more and more putting it coarsely, more and more detail, more and more subtlety, more and more complexity in it. He sees it first in a diffused fashion, and then he comes to see the object, whatever it is, the experience or what not, with greater and greater detail. This over time. I can only defend this by saying that this is the way the structure of language reflects the child's experience, and maybe this is forced on the individual; maybe this order is forced on the individual by the fact of the structure of language itself. There are those who believe this. I don't know.

Audience: Would you comment on Piaget's concepts of accommodation and assimilation and how these might relate to the child's use of detail?

Mr. Harris: If I understand Piaget, these two processes of accommodation and assimilation go on together, simultaneously; and they are constantly modifying one another. In other words, Piaget takes what child development used to call a transactional point of view that the individual and his environment are continually modifying each other in the growing-learning process. You see, one point that I have said and I will say again and again, the child is in a sense an active agent in creating his own environment by the way in which he, and here the behaviorists throw me out, "chooses to react". Now I infer a kind of volition which perhaps if you forced me into a corner I would have to abandon in terms of experience, set, and need, which vary from child to child; child A "buys into" the experience and profits from it, child B does not "buy into" the same experience and does not profit from it.

Audience: Since there apparently is nothing to prevent us from exposing the kindergarten child as well as a twelfth grader to a Matisse; and if we put his responses to the stimuli on a continuum, what are the components of the least complicated dimension and the components of the most complicated dimension of this response continuum.

Mr. Harris: What are the least and most complex did you say?

Audience: Is there a way for us to differentiate so that we can make a kindergarten youngster, say in conjunction with a Matisse, expose him to the significant art in ways that will be meaningful to him and helpful?

Mr. Harris: I believe in the old tried and true technique of letting the youngster talk about this stimulus object, encouraging him to talk about it and perhaps talking to him about it in--now I would hope you wouldn't talk to him as you would if you were an art critic addressing a lecture, addressing an audience in the Metropolitan--but you might talk about color, you might talk a little about what the child likes and why, getting him to put it into words, now it may be a very crude level but it is laying a foundation; and I wouldn't push it too hard; but I would keep it there and I would let the opportunity for discussion; if it didn't arise, I would make some opportunity; and if it didn't seem profitable, I would drop it for a while.

Audience: What is the role of exploratory experience?

Mr. Harris: Well, I think for the young child the doing, the very making of things is itself inherently pleasurable. I think, if you will go along with cognitive theory, as I see it, rather than behavior theory, the young child is more equi-modal in his apprehansion of experience. He uses all his sensory modalities. As we grow up in a highly visually oriented world and in a verbally oriented culture, he leans more and more heavily on what he sees and on the use of language to substitute for feeling, doing, handling, reaching, touching, you know. It is economical, and we overdo it perhaps; but he becomes more and more dependent on these modalities and so the center of gravity and instruction swings toward words. But it is just through habit we depend more and more on the visual and the word for communication; whereas, for the young child, this weight of our culture hasn't rested as heavily on him; and he uses his other modalities more frequently. So for the youngster, this sort of thing that Werner calls the physiognomic perception sort of thing, which I think is really a combination of postural, kinesthetic, motoric modalities, the youngster leans more heavily on this. I have heard several of you say we force it out of him. Well, I

think what we are doing isn't entirely a thing that teachers are guilty of. It is just the way the culture is; and the culture bears down on the individual, you see. This museum of poor art to which we are constantly exposed is there.

SKETCHES TOWARD A PSYCHOLOGY OF LEARNING IN ART

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I am forced to admit from the outset that I cannot accomplish in this paper what I would like to--namely, the groundwork for a theory of learning in art. It would be a challenging work of the imagination to suggest what kind of person armed with what kind of knowledge would be needed for this job. But I have not chosen this route.

When I speak of a psychology of learning in art, I mean to indicate, modestly, the beginning development of only one of several possible theories with some of the likely axioms and theorems that would pertain to it. Considering that the entire notion of a psychology of art is a fairly recent and novel idea, my erstwhile objective is nothing short of chancy. Yet the climate is assuredly right, if I read the intellectual signs of the times, for trespassing from both sides across the boundaries between psychology and art.

The ferment within psychology concerning learning theory I leave to more able analysts within that discipline, feeling it unseemly to speak of the squabbles and reconciliations in another family. Instead, I have set myself the more realistic task of selective trespassing and selective neglect of the vast eye-and brain-taxing literature on learning itself. The sketchbook idea comes in because I borrow garments from psychology in which to dress characters from art and art education. This might be dubbed the "Mrs. Siddons as the Tragic Muse" approach to the problem. As in a sketchbook, the ideas will have to be more suggestive than conclusive, for while they might be judged as ends in themselves, I would prefer that they be judged for what they may lead to later.

The scope of even this more realistic task is frightening enough to make me fumble my five-by-eight cards nervously. Let me, therefore, box myself in by setting still further limits to my inquiry, this time making my approach vulnerable to the charge of inconsequence in my own field. I propose to focus on the adult (college) level, on individuals working alone, and on learning in the context provided by sequential drawings. The possible irrelevance of this focus comes from my ignoring vast areas of meaning in child development, group processes and interaction, other kinds of art production, appreciation and art criticism, and to a great extent aesthetic perception itself. I am forced into this posture by the scope and logical incoherence of the broader field of art education, by the necessity to draw upon content from my own research interests, and by my very real need to have a locus from which to depart and to which to return on my excursions into psychology. Otherwise I would produce a mere catalogue of the unconnected. Here, if I succeed at all, I would like to provide much that can be criticized, extended, and even disproved outright.

Still another reason why I will not attempt a coherent theory, apart from the simple fact that I cannot, lies in the eclectic nature of what I will select from the psychological literature, since I am not consciously partisan to any one viewpoint in psychology. Rather what I select or neglect will be determined by two simple criteria, in nature functional and aesthetic. The questions these will pose are: "Can the connection be made?" and "Is there cogency and fruitfulness in the translation?" Although I could cite numerous warnings on the procedure I am about to follow, other learning theorists would support me. Postman,[1] for example, in discussing knowledge on learning in relation to education says that "...the analysis of the process of ...education does not call for the formulation of special principles; it calls for the application and elaboration of the general laws of human learning." It is to attempt a partial test of this assumption that this paper is written.

It is from time to time put forth that we are undergoing a kind of Copernican revolution in the life sciences.[2] In the psychology of learning, there is an ascendancy of cognitive theory, which "...in its baldest form ... differs from the other approaches in its insistence upon the elementary fact that we cannot fully understand an individual's reaction to situation A until we know how A appears to him."[3]

This premise of cognitive theorists is superficially most appealing to me. Yet, by and large, I have found no writers harder to follow into battle than these same cognitive theorists. It becomes patent that it is hard to know who or where the enemy is and what kinds of arms are being borne. One of the reasons why this is so is brought out in a statement by Estes[4]:

> "...no convergence is imminent between the educator's and the laboratory scientist's approaches to learning. The latter is interested, not in 'learning as a dynamic process' but in learning as a system of relationships among operationally definable concepts; not in the 'totality of learning' but in the aspects that may usefully be abstracted and generalized; not in 'focus on the learner' but in the formulation of predictive, and preferably quantitative theories."

In the same article, Estes points out that the connection between psychology and education is like that between physiology and medicine.

All in all, it seems defensible to say that the language of the cognitive theorist, who talks bigger and sees man more "from above," and the methods of the functionalist or neobehaviorist, who speaks littler pieces and sees man in specific and controllable context, need to be merged in my task. This is like urging one to be a "hard-nosed soft-head," but I know of no better advice than that of trying to resolve this "cognitive dissonance" by some "transcendence" of these polemical schools of thought. I have elsewhere[5] averred my faith that "larger or molar units of structure and properly-sized molecular units need not be seen as incompatible. The implication is that neither 'fat' gestaltism nor thin atomism will do."

One of my problems is certainly that of language. The earlier quotations from Postman and Estes suggest, first, that communication will be enhanced between psychology and education if the same construct families can be used in each, and, secondly, that the big statements concerning learning by educators are unacceptable to psychologists. Again, the cognitive theorists may supply a bridge. In still another way, fuzzy phrases such as Robers' "internal locus of evaluation" may find an objective or operational counterpart in the findings of experimental research.[6]

On the topic of language usage, signs in the wind endorse the proposed acts of trespassing. As Barkan[7] recently pointed out, it is now widely admissable that the methods of the behavioral sciences can be profitably applied to the understanding of many facets of art education. Consider the following neologisms[8] as testimony of this point: stylometrics, iconology, linguistics of fine arts, iconic sign, iconic mode of representation, the psychology of art, the psychoanalysis of art, art strategies, aesthetic morphology, and the biology of art. You will not find any of these in a standard psychology of learning text, but they can be uncovered with relative ease.

There are still a few more points to my rambling preamble. The current literature in our field abounds with references to the "is ought" distinction,[9] or the difference between descriptive and prescriptive uses of language in research reports. Usually the instances singled out are those where correlational or configurational studies have been followed by a charge on what "must" be done in art education. This point in criticism is well taken and should lead us in research to the point where our reporting is not so naive. On the other hand, the issue in the study of learning is infinitely more subtle. Here we more likely deal with plain old "is-ain't," and the frustrating variant "can't tell." The "ought" is hidden within the very design of our experiments, in the assumptions behind our controls and our dependent and independent variables. The critical eye of the philosopher and the researcher must focus on this much more difficult to criticize problem itself.

A still more subtle and hidden assumption may be found in the cognitive theorist's belief that experimentation has the major function of "revealing" structure and processes working, as Bruner[10] puts it, from the "inside out." Still, there is no reason why "naturalistic studies" and experiments cannot go on hand in hand. In animal studies, the researches of ethologists such as Tinbergen and Lorenz[11] suggest that this may be the case. In education, a recent review[12] of "Educational Programs: Early and Middle Childhood" contains a chapter heading "Naturalistic Studies of Classroom Learning." This orientation suggests that one formulation of the learning problem might be "what is actually being learned?" while another might be "what conditions affect a representative kind of learning?" The interdependence of these two questions should be obvious, especially when we consider the state of knowledge about learning in art. Prematurely plucked theory may hinder empirical observation, but, on the other hand, the constraints of experimentation are a stable frame for the interpretation of observations.

Geiger,[13] clarifies the point of view of the researcher toward any such implied conflict:

> "...the scientist has consistently refused to be impressed by a problem of knowledge. His content of knowing or inquiry is fixed by a particular problem or set of problems (whether theoretical or applied), and therefore the most fruitful assumptions in science are designed to integrate, not to separate, problem and solution. There are problems of knowledge, of course, but they are not 'epistemological,' that is, not those of trying to get an already separated subjective knower and objective world together again; they are contextual problems, those concerned with initiating and directing a series of inquiries called into existence by difficulties to be overcome."

Having presented these introductory ideas, I nevertheless know that I struggle with certain unexpressed and possibly inexpressible doubts in my own mind. Earlier Lanier[14] thought to detect in my stance a certain inconsistency - a kind of "empirical mysticism," if you please. Blackmur[15] put his finger on this deep source of discontent in an essay on Yeats, when after arguing for a "stiffer intellectual exercise" in the interpretation of myth and magic in Yeats, he capitulates by saying "...that magic, in the sense we all experience it, is nearer the represented emotions that concern us in poetry than psychology, as a generalized science, can ever be. We are all, without conscience, magicians in the dark." To this lack of overlap between art as experienced and knowledge of art, I do obeisance. The concerted disciplines gathered here may hit their limits from other directions, but just as drastically. And I cannot share the hope[16] that "...humanistic research in what is perhaps the most human of man's endeavors" will advance us even as far as the kind of inquiries here proposed.

In any event, I must write as an art educator, not a psychologist, positioned between an eclectic, derivative, or applied learning theory, and a slowly sharpening image of instruction and learning in art, the latter begin contingent on the "structure of knowledge" of a particular discipline or body of knowledge, conceived in the fashion of Bruner's writings on this subject.[17] The work "structure" is extremely troublesome and elusive, as later usages may illustrate.[18]

Change and Learning in Sequential Drawings Where Instruction is Absent

Claude Monet[19] thought young artists should:

> "...paint as they can, as long as they can, without being afraid of painting badly. If their painting doesn't improve by itself, it means that nothing can be done--and I wouldn't do anything."

Hidden in this simple advice from an artist is a key assumption underlying my presentation. This is that from the simplest first scribbles of the child to the drawings of the most advanced artist, change across drawings has typically the features of a "learning automation" about it. What artist has not had the experience of looking back on earlier work and seeing it as, possibly, shrunken, simple, direct, naive, or whatever, but within a history of continuous change, still, inescapably connected to present products? Many cases of primitives showing continual improvement without "instruction" also come to mind. I mention these instances, not to discredit instruction, for my aim is to eventually clarify its proper and facilitative function, but rather to point to certain features in a series of uninstructed drawings, stretched over time, which might help us to conceptualize what change and learning in drawing are like. I do not limit myself to any kind of drawing, such as representational drawing; nor do I deny the many, many influences that affect drawing. Kris[20] has ably stated the broad nature of these:

> "...art is not produced in an empty space...no artist is independent of predecessors and models...he no less than the scientist and the philosopher is part of a specific tradition and works in a structured area of problems."

Yet there is something about this section of my paper that makes it hard to state, even though my aim is to make it disarmingly simple by making little of the aesthetic and symbolic properties of drawings and focusing on the act of drawing itself. Arnheim[21] begins to make the point I am after, when he suggests that the act of drawing has its own constraints and reality about it, whatever is brought to it.

In terms of a single drawing, the artist is in effect an operating organism (system) regulated by feedback of his own acts or traces. The "cybernetic principle" which describes a "regulated system" as one guided by feedback of its own output comes closest to what I mean.[22] Of course, in a broad sense all conscious action, all speech, etc., conform to this model, but in the case of a drawing, the field boundaries of the page, the lingering trace made by hand and marking tool, the clearly sequential and cumulative nature of the traces, and the fact that a terminal product results set drawing apart as a prime example of a regulated system in operation.

In earlier research,[23] Burkhart and I tried to describe drawings done in a series in much the same way as a single drawing has been here described--that is, where conditions of theme and medium are relatively constant, and especially where prior drawings are present to influence direction, the drawings themselves become larger "feedback" units regulating subsequent drawings (we said that an evaluative phase of self-reflective feedback led to goal-setting, self-correction, and an eventual reformulation in the next drawing).

The gist of all this, to paraphrase Monet, is that "the very art of drawing and stringing out your complete drawings in time will improve your next drawings." Of course he was addressing "young artists" (a possible qualification) and seemed to feel that if nothing improved the case was hopeless or "unnatural." I do not believe either qualification to be necessary. In fact, I would assert that the paraphrased statement applies to any sequential (free) drawing situations and to any age from scribbling on, (and can even be extended to chimpanzees[24]).

According to Nelson:[25]

> " Emotive, motivational and cognitive dimensions...enter (into drawing) but find perceptual motor-expression. They are of greater significance in free drawing situations than in those where demand is well structured. And even though drawing has this duplex character, perceptual components seem of overriding importance. They are the limiting factor ordinarily."

What I take Nelson to be saying is that "perceptual components" (whatever they are), even in "free drawing situations" precede "emotive, motivational and cognitive dimensions" of drawings. An important quality of "perceptual components" is that they are not at all static, as the following statement by Gibson[26] well illustrates:

> "As things become identifiable, and as we learn to notice the differences between them, our perceptions of the world become differentiated. Formerly indefinite qualities become definite. ...the progress of learning is from indefinite to definite, not from sensation to perception. We do not learn to have percepts but to differentiate them."

If we take these "perceptual components" to mean "differentiated perceptions," then I believe it possible to speak of "learning to see" in the visual field of drawings and to suggest that this is quite closely tied to learning to "differentiate" in drawing "components" as well. I feel that this is a transactional process and that the two processes are in fact one process. In a basic sense, we do not learn to draw but rather, in the context of this section, we "learn to learn to draw" as we differentiate and redirect components, and sequences in our own drawings. A "good" drawing, however realized, is a high level of performance, but learning in drawing involves interdrawing change. There are good reasons why a systematic attack on my topic is difficult. Gibson,[27] again, states these well:

> "For linguistic meaning...systematic definitions of signs and symbols can be worked out on the basis of logical and psychological theory. ...But visual meaning has so far defied systematic analysis and the whole subject, including art-criticism, is notoriously speculative."

If this be so, and we reflect how little we know of the child's learning to use language (which Whitehead considered the most amazing learning of a human's lifetime), even though we are beginning to handle the syntactics and semantics of language logically and psychologically, how much more difficult of comprehension is what takes place in learning to draw which is part of a "whole subject" which is "notoriously speculative." As indicated, studies are progressing in the acquisition, use, and understanding of language syntax. The acquisition of syntax is seen,[28] as "a gradual and extended learning process that is comparable to other forms of meaningful learning and retention." Braine[29] has done preliminary analyses of two-work utterances of children which follow "one-word sentences" and precede "primitive sentences." In the two-word sentences he finds the child manipulating a "pivotal construction" based on his knowledge of certain key (pivot) words.

Language acquisition studies are mentioned because Kellogg,[30] Alexander,[31] Arnheim,[32] and Morris[33] make similar claims for the acquisition of drawing component "vocabularies" and "syntax" in the young child. I have been most impressed with this congruence of opinion on the emergence of pre-pictorial and early pictorial formal properties in the young child. By ending where art education usually begins,[34] that is, with "pictorials," Kellogg has, as Morris points out, performed a valuable descriptive service in recording and labelling stages in "pre-pictorial" drawing. These she terms, in order, scribbles, diagrams, combines, aggregates, and, lastly, pictorials. The latter are constructed out of the progressively differentiated forms of the earlier stages (each of which she has further classified into developing form units). These logically consistent basic stages of Kellogg are in need of further verification, but as they stand they are provocative and useful concepts for reconstructing "perceptual and graphic differentiation" as observable in drawings.

Alexander[35] brings to bear a cognitive theorist's viewpoint on change and "power" in children's drawings. A key viewpoint of his is that:

> "...the rule-boundedness of drawing does not consist of externally imposed rules, but of constraints which are implicit in the act of drawing."

To Alexander, any particular individual's drawing is "generated under constraint," that is by a set of rules. Further, to define these rules, he states that:

> "...The schemata of the drawing were invented before the drawing; most of the basic forms which appear in a drawing were known before the drawing was done, and it is this set of available schemata which constitute the rules within which drawing can take place."

He postulates that there is a schematic base to all art, agreeing with Gombrich[36] who sees all art as "conceptual." Where do the schemata come from? He would agree with Kellogg that they come not from other children or adults or from the world directly, but from the act of drawing itself. To explain this emergence into differentiation, Alexander[37] presents three "postulates."

> "1. The child frequently reproduces his own previously established motor acts.
>
> 2. These acts are modified during execution by random variation.
>
> 3. They are also modified by a highly systematic built-in process of levelling and sharpening."

In the first postulate on how schemata develop, we find traces of Lowenfeld's[38] "repetition for self-confidence," or Piaget's[39] "function pleasure," coinages which seem to interpret as well as label. In the second postulate, repetition is seen as never the same because freedom, elision, variation, errors, and automatism creep in. Whichever the more plausible explanation, repeated elements undergo "random variation," apparently mostly on the motor side. Postulate three, however, brings in the perceptual differentiation earlier cited, but ties it directly to "sharpening," a procedure whereby the figure or form is strengthened into "versions which are easier to encode perceptually." What was almost something now becomes that something and extraneous elements are left out, for "...it is not the passive side of memory which obscures the detail, but the creative act of reproduction."[40]

Alexander goes even further than this, purporting to show how these postulates help to explain not only the origin of schemata and their change across drawings, but how organization and integration occur in drawings--namely, as a result of "the child's developing ability to force the forms apart from one another."[41]

Morris,[42] in his study of picture-making behavior in the great apes, concludes his book The Biology of Art, with six "biological principles of picture-making." Space will not permit much more than their names here, except where they extend the viewpoints (notice I have not called these "findings") of Kellogg and Alexander. Morris's principles, "which apply to picture-making as a whole and cover everything from Leonardo to Congo" (the latter the best of his ape-painters) are:

1. The principle of Self-Rewarding Activation. This was seen in Alexander's pleasurable repetition, Piaget's "function pleasure" and Lowenfeld's "repetition for self-confidence." The importance of this principle is so pervasive and it is so simple that it can easily be ignored as an essential theoretical building block. In Morris's[43] words:

> "All pictures, whether by young apes or adult humans, must have a self-rewarding element involved as all or part of the motivation of the picture-maker. Other sociological or materialistic motives may or may not be operating at the

same time, but if the production of the picture is not also a reward in itself, then its aesthetic value will be impaired. This particular point has been discussed frequently, but judging by the fact that it is so clearly illustrated by the apes, it would appear basic enough."

In passing, it should be stated that Morris experimentally manipulated bribery with a food reward with his apes, who as soon as they come to associate drawing with the reward took less and less interest in picture-making itself so that any old scribble would do. Morris even refers to this as "commercial art" among apes!

2. The principle of Compositional Control. This principle is confined largely to placement, filling of space, repetition, etc. Animals and young children, by the way, seem to prefer the stable "complexibility" of regular patterns (geometric, nested, etc.). Preference for asymmetry and complexity as Barron[44] uses these terms, is apparently a later development. The amount of figural "uncertainty," to use a variant of an information theory term, which can early be tolerated, seems to be slight. McWhinnie[45] and other students of McFee are presently investigating learning of the preference for these more difficult figures and arrangements which are a part of the vocabulary of contemporary art and appear to increase with art training.

3. Calligraphic Differentiation. This principle is akin to Alexander's "sharpening" postulate, since it refers to a process of clarification and differentiation of "details and component units of a picture, as opposed to the inter-relations of these units."

4. Thematic Variation. "There are two factors involved here: the finding of a theme and the subsequent variation of it. Sometimes the basic theme (will) itself be completely replaced, but more often (the artist will) simply find some way of making a slight enough change to produce a variation without completely obscurring the original theme on which it (is) based."[46]

Morris gives an example from Congo, one of his chimpanzee picture makers, showing how Congo took a simple fan pattern and varied this theme into: Split fan, centrally-spotted fan, stippled fan-bundle, curved fan, and reversed fan. In the child, thematic variation usually proceeds via differentration, where one theme grows out of the preceding in increasing complexity. In adults, complex and simple phases may follow each other, as a reaction one to the other. The dynamics of thematic variation will be subsumed under the learning set "directionality" in later discussion, whereas change of theme will be subsumed under "uniqueness, novelty, or innovation" learning set.

5. Optimum Heterogeneity. Morris sees a Scale stretching between "maximum heterogeneity (a mass of fussy detail)" and "maximum homogeneity (blank space)." The decision as to what constitutes "optimum heterogeneity" is apparently subjectively determined, by ape and human. Morris admits that there are transitional stages - as between "multiple scribble" and "blot out" when this principle seemed to get lost, but not for long. This principle, being largely unjudgable, is a difficult one to operate with and brings one to the much debated" when is a picture finished question. Beardsley[47] gives the answer, although one weak in explanatory power and operational meaning. A picture is finished, he says, when the painter runs out of things to do next.

6. Universal Imagery. The source of universal imagery need be seen as neither mystical nor unconscious in nature. Morris makes a convincing case for muscular, optical, and psychological factors as parameters for universality of forms. On the ape - child - adult artist continuum, the shift is progressively from the muscular and the optical to the psychological. "As there are much greater individual differences in personal psychology than in arm musculature, or optical structure, it is not surprising that it is amongst the professional adult picture - maker, where the muscular and optical factors are most suppressed by the intellect, that one gets the greatest pictorial variation, and the weakest universality of imagery. In the pictures, of young children, or untrained adults, the universality is greater, owing to the levelling effect of muscular limitations and also the (as yet unobliterated) legacy of the strong pre-representational domination by optical influences over the image precursors."[48]

In recapitualtion, Kellogg gives us the clearest description and taxonomy of pre-pictorial graphic development and differentiation, specifying its interdrawing or sequential drawing base. Alexander gives us the broadest explanation of forces bringing about such progressive differentiation and organization while Morris gives us the most far-reaching principles of picture - making as content within Alexander's scant repertoire, replacing, for example, "levelling and sharpening" by "compositional control, calligraphic differentation, thematic variation, and optimum heterogeneity. As was true in the understanding of children's drawings near the turn of the century, the valuable insights are largely being generated from outside the art teaching profession, just as perspective on the existing literature on children's drawings is currently best analyzed and organized by a psychologist, Dale Harris.[49]

The above authors, much like Piaget, are non-experimental, though, they are, to varying degrees, logical and pre-theoretical. If the focus on sequential drawing as a learning automation has any merit, it must lead to fruitful questions and be submitted itself to checks and self-corrections. For example, Smedslund's[50] experiments with children on trainability of the "conservation" principle as described by Piaget, seem to suggest that stable mastery of such stages in thought may indeed proceed without much benefit of "formal instruction," as apparently is Piaget's position. Within "pictorials," the mastery of schematic detail, proportion and articulation depicting the concept "man" appears to have, overall, according to Goodenough and Harris, similar stability. Representational three dimensional space in "pictorials" has a like history of development, to all accounts.

It is, however, with the more difficult and central aesthetic and psychological ends of art that profound difficulties arise. I can hope to do no more than expose to your eyes the weight of my massive burden of confusion on the topics.

Unlike language, which if Bruner is correct can move toward progressive arbitrariness away from enactive and iconic modes of representation, graphic images and symbols are neither as completely arbitrary nor social. Part of this confusion is historical and cultural, for to call a symbol non-social is, at least on the common sense plane, a contradiction of terms. Yet I am convinced that the degrees of freedom within graphic images and symbols is far in excess of those in language. To begin with, let us hark back to Gibson's charge that no logic or psychologic can be worked out as yet, and that the whole field is "speculative." L. L. Whyte[52] makes the same claim in his introduction to a book of essays from science and art on "Aspects of Form" when he says that art "...though for many the noblest of human activities, is still so obscure that Gombrich can provide, just for good measure in this volume, a new and intriguing interpretation, perhaps as useful as any yet."

Let us consider the difficult concept of visual meeting and dwell a bit upon its less directly aesthetic components. Visual symbols, in common with all symbols, are at the spex of complexity in the hierarchy of "meaning." Symbols "...mediate knowledge, as distinguished from perception, and they are the basis for reasoning, creative imagination, invention and discovery." Further, symbols as commonly used "...are completely determined by culture."[53] And to the psychologist "drawings not resembling anything familiar are called nonsense forms and, along with nonsense syllables, are employed in experiments on memorizing" or in studies of "rote" as opposed to "meaningful" learning.[54] But even here, it appears that in drawing nonsense forms from memory, recall does not occur until the senseless form gains sense.[55] Further, research on learning to recognize aircraft "suggests that when a nonsense form becomes identifiable it also becomes meaningful."[56] As I interpret these words whereas symbols may be "completely determined by culture," a so called nonsense form is imprinted with sense or meaning by a human being who has any commerce with it, and the resulting tincture of meaning might run the whole spectrum of meaning from simple use-or need-meanings to symbols themselves, which "mediate knowledge."

In our time, our shared visual symbols are singularly chaotic and impotent. To have all myths and symbol systems possible, is to have none. The great freedom thus provided us as artists must indeed exist in the aesthetic and psychological functions of art, as Morris[57] suggests, the religious and communicative functions being essentially dormant in our present culture. Before I get over my head in unprovable assertions, let me state that this condition exists not only for the visual artist, but all artists. To be sure, we have all that past cultures symbolized to rummage among, and indeed perhaps pictures owe more to other pictures, as Wolfflin, Malraux; and Cezanne insist, than to nature, and, I suppose I am saying, to even myths and symbol systems in themselves. Lest it seem that I am lamenting of being robbed of my religion, as Yeats did, by the science of the day, let me be quick to correct that impression. I speak of a general problem of inbalance in modern man which need not be lamented but described. I am inclined to the notion, as expressed by Adams[58] in an essay on Yeats, that any war between art and science is a false one:

> "Each presents its own meaningful fiction. One is essentially a fiction of human passivity, a world of mechanical forces in which man is contained. In its great systematic statements it is a supremely beautiful fiction, but its truth demands a counter-truth, another fiction. The fiction of literature provides an active human intelligence with the power to contain the world in his own imagination rather than allowing it to contain him."

(I cannot, in passing, resist saying that it is logically possible, though strange, that the one "fiction" can make the other its subject.)

But there is a reason why a great poet like Yeats writes as stronge a book as his A Vision.[59] Lacking a meaning system, a symbol system, a myth, he set out to invent one. He wanted "...a world larger than himself to live in; for the modern world as he saw it was, in human terms, too small for the human spirit, though quantitatively large if looked at with the scientist."[60] However outlandish A Vision may seem, Yeats wanted something which would stand toward his poetry in the relationship that Dante's Divine Comedy stood toward the Christian Myth. Both poets "...strove for a visible structure of action which is indeed necessary to what they said, but which does not explain what they said." What Yeats created was not a mythology but "an extended metaphor ... which permits him to establish relations between the tag-ends of myths eclectically gathered from all over the world."[61]

I leave to the anthropologist whether in homo sapiens there is a "biological universal" to be called "need: myth." Notice that Yeats is not thought to have needed the myth for the sake of his poetic craft but for his expressed desire for necessity or, if you please, symbolic meaning to his act of creation.

Gombrich,[62] in a recent talk to psychologists, suggests, following Pope, that "the sound must seem an echo to the sense." My simplest point, then, is that when discussing visual meaning and symbols as they come into art, "detachable meanings" which exist in symbols "as completely determined by culture" are more or less absent from out lives, so that the sense which the sound must seem to echo is either chimerical, extraordinarily abstract or esoteric, or idiosyncratic. I will now get into trouble, for sounds in themselves take on meaning in commerce with them. Further, as Gibson[63] acknowledges:

> "...any scene begins to appear strange when the eyes are fixated long enough. The attempt to observe one's visual field leads in this direction as does ... the painter's intent view of something which interests him."

In brief, I am leading to the notion that "aesthetic" meanings are "non-detachable," belonging more to what Gibson would call the "visual field" as opposed to the "visual world," to the "echo" and not directly to the "sense." (I might just as well use Langer's "symbolic transformation" concept now that I've said all this).

But the point of greater significance here has to do with the idiosyncratic sense or meaning that the drawing echoes, in which our attention shifts from "sense" to the picture-maker's perception of "sense", whether from what is culturally nonsense or from symbol is somewhat irrelevant. It is this which is realy echoed, or eventually "matched," to borrow a construction from Gombrich.[64]

Polanyi[65] suggests there is a meaning to any context, but man-made ones, including drawings, are "contrived" and thus have a "message." This means, I feel, that the "context" or the "non-detachable meanings of the visual field" stand in some relation to the detachable, contrived meaning. The one side would appear to be more "aesthetic," or more "enactive and iconic" (these terms, in turn, match Morris's[66] "psychological, motoric, and optical").

The next point is that these contrived meanings are today mostly outside any myth. The earliest meanings "contrived" are apparently motoric and perceptual, locked in drawing itself. Later the contrived messages aid "creative and mental growth"[67] but, in my analysis, may often focus on sense at the expense of the echo, the non-detachable contextual or aesthetic component becoming subservient to socialized or logical perception of three-dimensional space, it being forgotten how hard-earned the smudges, lines, perspectives, etc. were when "illusion" was under conquest in the service of other myths or in the effort at mastering "illusion" itself.[68]

Wickhiser[69] has expressed the question I am skirting as follows:

> We discover that classifying or establishing...stages of development assumes all children want to do realistic art. This may have been a valid assumption prior to the modern art movement, but during the last fifty years many non-realistic types of art expression have developed, which seem to be more natural modes of expression. Add to this the fact that the greatest art periods of the past have been more Symbolic than Realistic, and suddenly we can no longer assume each child is striving to move out of the Symbolic stage into the Realistic.

Harris,[70] from a different vantage point, however, states that "...graphic ability which achieves representative drawing of esthetic or artistic merit cannot be discerned in young children; such appears only after certain psychological (cognitive) processes have run their course, and the child has mastered techniques appropriate to the medium. Much the same can be said of graphic traditions other than the representative."

Are these positions both reasonable and are they antithetical? I propose that if there are motor and perceptual determinants of drawings, assuredly there are psychological (I know all of these terms fall within psychology, but am following Morris's usage) or cognitive determinants of still greater scope. Otherwise we are in the untenable position of suggesting that the aesthetic meaning of drawings falls off with "the naming of Scribbling" and must be recaptured after representational drawing is mastered or after "certain psychological (cognitive) processes have run their course."

In a time when Piaget's considerable contributions to child development are being applied willy nilly to everything and everywhere, it may indeed be appropriate to consider his system of thought more closely for what it has to say about art (which is very little). Piaget[71] himself has said:

> "...very often, the young child appears more gifted than the older child in the fields of drawing, of symbolic expression such as plastic representation, participation in spontaneously organized collective activities, and so on, and sometimes in the domain of music. If we study the intellectual functions or the social sentiments of the child, development appears to be more or less a continuous progression, whereas in the realm or artistic expression, on the contrary, the impression gained is frequently one of retrogression."

In the same essay, he contrasts "social reality" with the "life lived by the ego" as follows:

> "On the one hand, there is the material or social reality to which the child must adapt himself and which imposes upon him its laws, its rules, and its means of expression; that reality determines the child's social and moral sentiments, his conceptual or socialized thought, with the collective means of expression constituted by language and so on. On the other hand, there is the life lived by the ego with its conflicts, its conscious or unconscious desires, its interests, joys, and anxieties; these form individual realities, often unadapted and always incapable of being expressed solely by the collective instruments of communication, for they require a particular means of expression. Symbolic play is nothing more than this method of expression; created almost out of nothing by each individual, thanks to the use of representative objects and mental images, all of which supplement language, its function is to permit the fulfillment of wishes, to compensate for reality, to allow free satisfaction of subjective needs; in short, to permit the fullest possible expansion of the ego as distinct from material and social reality."[72]

I quote Piaget at length because he speaks most cogently against the application of his work on social, moral, and logical development to matters aesthetic, and because his peculiar use of "symbolic" is one which I wish to borrow, to avoid confusion however, I will turn his usage into "idiosyncratic symbol," because that is precisely and simply what he means by it, though this usage contradicts convention.[73] There will be commonality (a further contradiction) in an "idiosyncratic symbol" by dint of some residue from our common life or from some "biological universals" (which I leave to the anthropologists) wherever man is sociolized. Gombrich[74] comes close to this meaning when, "meditating on a hobby horse" in search of the "roots of artistic form" he sees aesthetic creation as not "...representation, image-forming, or abstraction, but simply the making of a functional substitute, an object which can serve in place of an original (or desired) experience in respect of some function or need of the individual." The formulation is very simple, like saying in this context "shaping freely something seeming like an echo for some idiosyncratic sense." Thus, we deal not just with the "relation of man and his environment" but as Lowenfeld[75] well knew with the relation between man and himself as celebrated in "symbolic play."

The difficulty is that some kind of nativism is apt to be inferred when unintended. There is no intent to make these processes other than "natural," rationally describable, and acquired. Yet "...the very logic of an education based upon intellectual authority tends to eliminate or, at least, to weaken" the aesthetic life of which we speak.[76]

In the same volume from which the quotations from Piaget were drawn, Ott[77] speaks of the similarity between children and artists (as I am trying to do only with respect to learning to learn to draw):

> "Children, like artists, are influenced by the effects they create as their work proceeds and they change their concepts accordingly. With increasing experience they add to their fund of shapes and sounds, each of which can be submitted to infinite interpretations."

But Ott is indeed a nativist in his references to "racial archetypes" and other, to me, unnecessary and nonexplanatory assumptions. Perhaps like many great art teachers (Cizek for example, who wanted his own island on which to raise child-artists) Ott either denies that these powers are capable of instruction or else implies they may be amenable only to his personal methods. He says[78] that children's

> "...aesthetic impulses should not be limited or constrained by any aesthetic formula based on historical, modern, or popular art. Children learn absolutely nothing from art teaching. They only develop of themselves."

I am not going to comment on this viewpoint, for I trust that though I may appear to be a romantic I am looking less like a mystic.

There are still several more points about the "idiosyncratic symbols" or sense echoed in drawings. It is only because we do not have a duplex culture, where art and science instead of art or science, the conjunctive not the disjunctive, exists, that verbal processes are often seen as inimical to visual art. Certainly words can echo the sense as well as images; but from Pavlov[79] to Bruner[80] the relative inferiority of "iconic modes" of representation is pointed out, and for the ends these men have in mind, they are undoubtedly right. For "idiosyncratic symbols," however, the non-arbitrary, non-systematic properties of visual images and of sounds may be unexcelled, just because of their relative lack of syntactic and semantic properties (or whatever the visual equivalents of these terms would be).

Gombrich[81] describes a game of "multiple matrix matching" in which the symbol is revealed through "the choice from a given set of matrices of what is least unlike the referent to be represented". He illustrates his meaning by a parlor game in which an acquaintance is to be revealed through such questions as: "If he were a flower, what would he be? Or what would be his emblem as an animal, his symbol among colors, his style among painters? What would he be if he were a dish?" In this freer field, it is the pile up of hunches that counts. It is a "refusal to gate," using the phrase Gombrich borrows from Bruner, who uses it to describe perceptual economy where we either cannot derive more information or do not need it. But the game is different when the differentiated forms and organizational schemas we have won from the acts of drawing constitute the matrices from which to construct our "hobby horse."

> "The layman may wonder whether Giotto could have painted a view of Fiesole in sunshine, but the historian will suspect that, lacking the means, he would not have wanted to, or rather that he could not have wanted to. We like to assume, somehow, that where there is a will there is also a way, but in matters of art the maxim should read that only where there is a way is there also a will.[82]

What is won from drawing itself can aid us in the next drawing. This is almost a tautology, but seems far from being acknowledged. Language and logic have taught us that images and other sensory elements are useless, except, in the modern view, as steps in the acquisition of language and logic.

It can hardly be conjectured what might correct this departure from the idiosyncratic symbol (which comes into Bruner's system when language and logic fail or are blocked even as elsewhere "personal metaphor" is a source of "ideas" and "intuitions."[83]) Reid[84] advised us to "abolish the use of articulated sounds and writing for a century, for then every man would become a painter, actor, or orator."

I know of no more poignant way to get at the tendency of words to hide us from ourselves in modern times than in a passage from Proust:[85]

> "The great difference there is between the actual impression we received from something and the artificial impression we create for ourselves when we endeavor by an effort of the will to bring the object before us again, I did not pause to consider; remembering only too well the comparative indifference with which Swann used to be able to speak of the period of life when he was loved (because the expression suggested something so different to him) and the sudden pain caused by Vinteuil's little phrase (of music), which brought to mind those days themselves just as he had felt them..."

I believe I am drawn to sequential drawings as my focus because of the long swath cut from early childhood to the mature artist. The fact that drawing schemata are developed to a certain degree for all of us provides a beginning "structural" base from which to study change.

The case is not greatly different, however, for a more arbitrary and later acquired art, like that of throwing on the potter's wheel. Once the rudimentary skills are learned (and here instructional methods can cause marked improved speed of acquisition of these skills), the potter can only throw what he masters from pot to pot. I often think I should speak within the context of learning as seen in sequential pots made on the potter's wheel, for it might be clearer and less arguable, because in comparison to drawing, potting has constraints or rules which have more intersubject commonality. The residue of pre-pictorial schemata and idiosyncratic symbols from earlier years would not work their subtle interference with newer learning-there would be less "proactive inhibition." While many styles and directions and paradoxes abound in potting, the time-honored skills still demand respect from layman and artist alike, even though the language of pots is closed to many and even though it speaks in many dialects. There is no such issue as "potting and illusion," for example. Where there is clarity of goals from level to level of the art, there can be clarity of knowledge about methods of learning related to them.

But it is precisely because drawing will not be forced into such arbitrary inter-subjective external rules and because the goals are in our century extraordinarily debatable that it is challenging, for it typifies the crisis of "knowledge" and learning in art and renders real and problematic what it is indeed to "think like an artist." Potting might do the same, to a degree, but it would have to be on a more exclusive and sophisticated plane.

My main points sketched to here need recapitulation:

1. Changes as seen in sequential drawings in the absence of instruction constitute a prototype of learning in art, occurring as they do in the works of primitive, untrained adult, and mature artist.

2. Sequential drawings are lawful across picture-makers on an appropriate level of generalization which considers:

   a. Motoric and perceptual differentiation of forms
   b. Sharpening of calligraphic components and their interrelations
   c. Sequential thematic development and search for novelty, seen in adult artists' as alternations between complex and simple phases, interacting with sets toward novelty and directionality.

3. Sequential drawings are at the minimum, lawful within picture-makers in continuity, elaboration, and search for idiosyncratic symbolic themes to which drawing schemata stand in a matched but non-detachable relationship, or seem like an echo (in context of the medium) to (what seems like) a sense (or is contrived by the picture-maker).

4. This entire viewpoint has been termed a "learning automation," to suggest that, par excellence, a person involved in sequential drawings is illustrative of the cybernetic description of a regulated open system, as extended to organisms-that is, a system directed by feedback of its own output.

The Description of Change and Conditions for Change in Sequential Drawings

It follows that no organism is directed, even in sequential drawings, by feedback of its own putput exclusively. Even the statement that art owes more to other art than to nature implies this to be so.

The interdependence of context in the medium and what is or can be contrived has been suggested. When the child masters what Kellogg calls aggregates, and even combines, diagrams, and scribbles, rudimentary pictorials are possible. When the potter can center, open, and draw his clay into an even cylinder, rudimentary non-cylindrical shapes are possible. When through random variation, sharpening, or "meaningful imitation" of our external schemata (we know very little about these things), a matrix of forms is extended, new contrived messages can arise from the next context.

I know I have observed this latter process again and again in adult picture-makers. One instance may illustrate this point. A girl, not trained in art, had chosen, on her own volition, the theme "nature" for a series of drawings. Later an interview revealed that by this she apparently meant certain idiosyncratic symbols representative of an island beach, a country garden, etc., stemming from her childhood memories and environment. She began with a tree which, even to her, seemed stiff and stereotyped. Dissatisfied, she observed trees between drawings and drew a more "real" tree. Though it was different, it was obviously not illusionistic or meaningful enough to please her. In disgust or from aimlessness she made curved "tired" lines. These suggested how she felt and she developed this curved axis first into figures, then into a tree with "gesture." She felt some relation between herself, her theme, and the lines and refined this relationship over several subsequent drawings.

There is intended to be nothing spectacular or conclusive about this simple report. How does it fit under the topic of "conditions?" Well, it springs out of the basic viewpoint toward change in sequential drawings. More particularly, "no condition" here is a condition, in that it was under certain controls.

At this point a deviation into other assumptions is required. Burkhart and I[86] tried to make explicit several assumptions underlying our "self-reflective learning experiments" in drawing. In a sense, to coin a phrase, we tried to construct a model of the "structure of practice" (rather than knowledge) underlying the artist's (and to a degree even the chimpanzee's) picture-making. Our assumptions were simple but crucial:

1. Drawing is a "dialogue" between artist and drawing
2. As such, drawing is essentially a private affair
3. Reformulation, self-correction, and self-direction are facilitated by minimizing change in:

    a. medium
    b. theme or stimulus
    c. procedure for self-evaluation
    d. general working environment

4. A "value neutral field" surrounding the picture-maker, removing extrinsic rewards, emphasizes the "principle of self-rewarding activation" Morris finds basic to picture-making.

Since these assumptions are delineated elsewhere[87] I will not dwell on their rationale here. The notion that art is a "dialogue" or a "crazy game of strategy" is commonplace in art writing. "Crazy" means that there are rules but that they are free to change in process and are somewhat particular to each "game." The idea of strategy and dialogue are exemplified in this statement of Black's.[88]

> "There is...in all artistic creation a characteristic tension between the man and the material in which he works...the artist literally wrestles with his material, while it both resists and nourishes his intention...He finds himself constantly excited by the qualities objectively present in the material which it is his aim progressively to discover."

In like manner, Santayanna[89] speaks of structure in the person and structure in the material and of their necessary tension and interaction.

In a very real sense, there is no "natural" condition for picture-making, but the artist's habits as abstracted have been a general guide. In addition, several research studies[90] suggested some support for "depth" or continuity of medium and theme and for specific evaluative activity on the part of the picture-maker.

The "self-reflection" learning experiment[91] Burkhart and I carried out under these broad general assumptions established the superiority of several further conditions for learning:

> 1. The strong facilitative effect of what we called "process feedback." Operationally, process feedback means giving the subject regularly sampled photographs of stages in the development of his prior drawing before he undertakes his next drawings-this is the most potent condition we uncovered. It bespeaks the importance previously ascribed to the drawing activity itself. It might be expressed thus: nothing seems to improve drawing like drawing and paying attention to how one draws.
>
> 2. The merit of what Rogers[92] calls an "internal locus of evaluation." In operational terms this meant that the subject "discovered for himself" what criteria he should use to evaluate his drawings.
>
> 3. The feasibility of carrying out the evaluation of one's drawings by a program (written instructions), this appearing to work as well as through mediation by another person (teacher surrogate).
>
> 4. The liklihood that the teacher surrogate or mediator and the internal locus or self-discovery evaluative setting instills in the picture-maker perceptions of himself as more creative, confident, independent, and worthy.

I know I have slipped a lot over on you, because I have not explained what it means to "improve" drawings. This is the subtle and important criterion for learning problem which is under constant study[93] but which cannot be studied profitably out of the context specific to the given research problem.

I had intended to borrow much more from psychological learning theory than I have to this point, but my many references seem largely foreign to this setting so I have not forced them into the discussion. There was indeed a "learning set" established in the case of the girl who drew the trees in the earlier example. She knew the conditions under which she would work, what would be supplied and what not, that she would have to initiate the theme and its development, that she would see photographs of how she drew, and that she would evaluate these according to her own goals. She knew that while I did not give her direction, I projected "interest" and "confidence" in her direction as she perceived these. She engaged in "trials" or practice-distributed "practice." I guess a psychologist would call it, with task criterion unspecified externally. "Process feedback" appears equivalent to "delayed knowledge of results" or, at the least, "information" through "stimulated recall" of how results were obtained. Evaluation of thes process information led to the development of "concepts" and "principles," probably "advance organizers" and "internally mediated or induced learning sets" for later drawings.

I do not believe it requires a stretch of the imagination to talk logically and objectively about conditions fitting an activity of which the main parameters are "idiosyncratic symbols" and "drawing schemata" (and drawing strategy, soon to enter the discussion). We will disagree to the extent that these basic parameters cause disagreement. I mean to make them extraordinarily abstract, pervasive, and basic to all free drawing serving simultaneously aesthetic and psychological functions for the picture-maker--that is, all settings where sense and its seeming echo, contrived message and context meaning, functional substitute for an internal state, or symbolic transformation involving images and forms is involved.

Bruner[94] has argued, even with children, that it is best not to mess up a person's method (or strategy) of processing information. What does "processing information" mean in the act of drawing and in sequential drawings? What, in fact, is a drawing strategy? To what degree can we speak of drawing as problem-solving? Do the terms used in the psychology of learning fit the drawing act? For example, is there anything to be gained by the distinction rote--meaningful, reception-discovery, visual-verbal; or classical and operant conditioning, discrimination learning, concept formation, principle and rule learning, and problem-solving? I have pondered many writings on these matters and taken many notes where I thought to discern parallels or possible translations, but while I may draw upon these, I have decided that this is not the time or the place to treat the possible correspondences systematically. After all, this is a sketchbook. Furthermore, the very effort strikes me as both pretentious and premature. It is a time to imitate selectively, but not to incorporate.

In returning to information processing, I have uncovered an interesting lead in pilot work on learning in sequential drawing now in progress. In working intensively with a small group of untrained (non-art major) college students, taking them one at a time and carefully sampling photographic data on their drawing processes, I have uncovered an interesting lead in pilot work on learning in sequential drawing now in progress. In working intensively with a small group of untrained (non-art major) college students, taking them one at a time and carefully sampling photographic data on their drawing processes, I have observed clear differences between drawing schemata and strategy when working from "mental themes" on the one hand and from a physically present complex still life on the other. In some subjects the two kinds of drawings would be quite hard to put together without further clues. Untrained subjects usually automatically assume a representational or illusionist set toward the physical stimulus but feel no compulsion to do so from a mental theme (I sometimes refer to these conditions as outside-and inside-the-head-junk stimuli). Further, about twice as long, on the average, is spent on working from the physical stimulus (which is, to be sure, rather complex). This suggests the simple notion that with these subjects more "information" is being processed for inclusion or translation into drawing when more time is taken. Further indication of this is suggested by the fact that when I give some subjects twice as much process feedback as others, they also seem to take more time on their subsequent drawings, whether from mental theme or still-life. The combination of still-life and increased process feedback, thus, keeps my untrained subjects at a drawing longer. When I shift subjects after four periods from one of these stimulus conditions to the other, there seems to be some transfer of time conditions to the new setting for those going from still-life to mental theme, but a big shift occurs with the opposite group.

I well know that time spent on a drawing in a free drawing setting is not in itself important as related to learning or change, but it is certainly a factor of possible explanatory significance where information processing and strategy are considered.

One of our doctoral students[95] studying the effect of "highly structured visual and highly structured memory approaches to drawing" has this to say:

> "Hale repeatedly points out that most of the 'great drawings' have been done from memory and not from life, but that the storehouse was full before the memory could be tapped. At whatever point in the education system the student undertakes to develop his drawing skill, he is in need of a background of visual concepts that can be drawn upon by memory. Some would say that this storehouse can be supplied only by direct contact with objects."

From the base supplied by the parameters of idiosyncratic symbol and drawing schemata, and in the perspective of this century, I see no necessary superiority for Hale's viewpoint. A contrary case could be made even more cogently focusing on the two parameters of drawing. If indeed all drawing is conceptual (or, at the least, more or less conceptual), the conceptual base need not be limited to "representation", especially as construed in the illusionistic tradition. It would seem that any approach which extended and enriched the symbols and schemata of drawing would fulfill this function. I rather sense that what Britsch and his followers Schaeffer-Simmerin and Arnheim call "visual conceiving" is not the mysterious thing it is made out to be, but merely the result of continual (sequential) drawing, and that the similarities seen, for example, in Schaeffer-Simmerin's book,[96] are a simple outcome of students working in proximity with each other and with a master or teacher, so that schemata and symbols are common property and receive fairly consistent reinforcement. Any teacher of a studio, or any scholar who has advisees, who has not seen this happen has not kept his eyes open.

Unexpected support for the idea that drawing schemata do not "naturally" incline toward representational illusion, comes from recent studies in the psychology of perception. Hochberg[97] claims that outline pictures are not a learned visual language, and that what learning there is, if any, "occurs very early in life in consequence of our normal commerce with spatial objects." Whereas Bruner[98] speaks of how it is to the child's advantage to "denature" his representations of knowledge into the arbitrary symbols of language and number as quickly as possible, it appears that "denatured" images or schemata much precede those later illusionistic ones which conceal their artistically speaking arbitrary nature from us. As Hochberg[99] puts it "...the characteristics of a given object may be communicated better as the representational fidelity of the surrogate deteriorates." But, as Gibson[100] points out, this is not to say that all perception is "schematic" or based on the misperceptions of observers because of subjective factors. Ordinary life and ambiguous or improverished stimuli in the laboratory lead to "schematic" perception, as in the famous study of Bartlett[101] where "nonsense" figures were altered in keeping with characteristics of the individual. It appears, says Gibson, that "literal perception" can also occur and be remarkably accurate according to stimuli presented.

More important for the story here, however, is the argument for "tertiary qualities" or "physiognomic qualities" which are increasingly felt to be, in large part, more a function of "in the object" variables than "in the observer" variables. Pratt[102] summarizes this viewpoint and I repeat his summary:

> "Tertiary qualities permeate and suffuse all perception, and in art reveal a heightened expression which becomes the very essence of artistic enjoyment and appreciation. Writers who have been influenced by this newer outlook tend to agree on at least three points: (a) Tertiary qualities can only be described by words which also connote subjective moods, but they themselves are not subjective; (b) they are intrinsic properties of visual and auditory perception, not borrowed from any other modality; and (c) they are probably correlated with higher-order stimulus variables. This last conviction awaits proof. If some Gibsonian global psychophysics can eventually produce it, the demise of empathy, at least in the fine arts, will be unavoidable."

The argument suggested by these references is that, though perception is often "misperception" in ordinary life, the "literal" perception of art does not depend on this schematic tendency, for there are tertiary or physiognomic qualities matching that to which we give expression-laden and subjective-sounding names in the art object itself. It is no contradiction to hint that the sense that seems to be echoed in the sound of the drawing schemata that seem to stand in some relation to an idiosyncratic symbol are actually made up of these very physiognomic or tertiary qualities alluded to. That these concepts can be logically combined, a kind of paradoxical "objective subjectivity," is suggested by Gombrich's[103] sweeping statements:

> The growing awareness that art offers a key to the mind...has led to a radical change of interest on the part of artists...The language of forms and colors...that explores the inner recesses of the mind has come to be looked upon as being right by nature. Our nature.
>
> To the artist the image in the unconscious is an mythical and useless an idea as was the image on the retina. There is no short cut to articulation. Wherever the artist turns his gaze he can only make and match, and out of a developed language select the nearest equivalent.

Whether such a growing tendency to resort to "formalism" will, in fact, offer those of us studying art some refuge from the accidents of both neoassocianism and ultra subjective relativism or not remains to be seen. But it is still a cognitive fact of life that such formal properties are "formed" into context and "stand in relation" to contrived sense.

At this point, against the rambling backdrop supplied by this paper, I would like to introduce the process emphasis raised by the term "drawing strategy." I have already labored at defining further certain consistent differences in drawing behavior that Burkhart and I earlier described,[104] but this work is just begun.

Psychologists have by and large used the term strategy to describe consistent modes of processing information. The very term "processing information" fits the productive side of art quite poorly. The broader terms used by Miller, Galanter, and Pribram,[105] "image, plan, strategy, and tactics" have greater appeal to one in the arts. Further, the analogies to computer strategies advanced by Newell, Shaw, and Simon[106] for use in simulating certain kinds of problem solving are attractive, perhaps because both of these sources reflect more global and eclectic positions which, nevertheless, have a behavioral or functional ring to them in that they deal with input-output relations and with feedback in a somewhat mechanistic manner. The computer simulation programs in particular use:

> "...a substantive view of the nature of information as well as the cybernetic principle of a control system that is both (a) sensitive to feedback indicative of behavioral error or discrepancy between existing and desired states of affairs, and (b) differentially responds to such feedback in ways that correct the existing error or discrepancy."[107]

The difficulty in speaking of a strategy in drawing is that the entire set of actions involved in making a drawing, described as a dialogue between artist and work are covertly mediated. "Inputs" can only to a general degree be manipulated without distortion of the process. A simple example of manipulation was given in the case of physical still-life or mental theme as beginning stimulus for a drawing. The "drawing-cognitive structure" of the learner, in terms of the kinds of "idiosyncratic symbols" and "drawing schemata" in his experience at the outset, seem especially important bits of knowledge for understanding what will ensue. For surely no S-R mediational chain, a horizontal left to right concatenation of antecedent and subsequent conditions in time, will suffice even for the understanding of the pre-pictorial child, although we need such attempted studies, even like the simple studies of Morris when he structured the drawing field for the chimpanzee by placement of stimuli within it. But the drawing act then changes from that where no such structuring or external stimuli are applied.

Rather, it would appear that certain "drawing operations" and "drawing transformations" are at the command or in the repertoire of the picture maker, and that it might be preferable to use this more dynamic language in preference to the term "drawing schemata." The latter term, "schemata," suggests a repertoire of forms, while the former, "transformations," suggests ways of forming and of relating forms. Probably both ideas are involved. Bruner and Olver[108] speak of concepts as being formed by imposing "transformations" on data, and, interestingly, feel that these constitute strategies that grow with age and allow for progressively simpler processing of information.

Because human memory and consciousness can manipulate only a few items at a time, and thus resorts to "chunking" of information,[109] the energy of the organism or system is distributed between encoding "chunked" input (to include in my thinking beginning or fuzzy aspects of the "image," in which symbol and schemata are already brought into tension), and selecting and applying "transformations" on this output, and for this reason, simple and clear strategies or systems of operations are important. Too many techniques and ways to operate and too many beginning ideas of nearly equal importance would effectively forestall action. When my subjects "stop to think" a minute or two about what they will draw next, I assume that they are reviewing symbolic material and schematic operations by means of 'mediating verbal processes"[110] and other mediating processes. Actually, I can only infer this from what subjects can tell me of this process. Will it suffice to merely conclude that an "image" and "plan" are emerging which, following Miller, Galenter, and Pribram,[111] will eventuate in a strategy with its tactics for carrying it out?

Actually, even language on this global level becomes excessively restraining for talking about drawing. Even if there is a vague "image" for a drawing, to what degree is there an overall plan? Burkhart and I[112] sensed that operationally speaking on a high level of abstraction, there were coherent strategies covering temporal, spatial, and hierarchical (evaluative) kinds of order.

But before discussing these kinds of order, I would like to deal with drawing as problem-solving behavior. As though it were not enough that this kind of behavior gives psychologists a most difficult time, I must express my conviction that drawings are more complex behaviorally than what I find in discussions of problem-solving. In Gagne's[113] discussion of "learning types," problem solving is "type 8," at the top of the hierarchy of learning types (the other seven being "prerequisites" to it). Gange says of problem solving that it "...is a kind of learning that requires the internal events usually called thinking. Two or more previously acquired principles are somehow combined to produce a new capability that can be shown to depend on a 'higher-order' principle."

Although the number "eight" is not a mystical one, Getzels[114] further subdivides problems into eight kinds, defining them along four dimensions: presented-discovered problems requiring convergent-divergent thinking, involving secondary-primary process thought, and having a stimulus reducing-stimulus seeking quality for the organism. For Getzels, the highest order of problems is one in which "...the problem itself exists but remains to be identified or discovered, and no standard method for solving it is known to a problem-solver or to others."

Simon[115] has recently said that "problem-solving involves selective trial-and-error search in a vast space of possibilities." "Selective search" means in the case of humans usually less than 100 alternatives and not the 10^{120} choices that would have to be considered in playing chess, for example, if an algorithm were involved. Therefore some "heuristic" hunch about short cuts is invoked. Creative problem-solving is near the "blind-search end of the continuum." Further, for Simon, the "novel" arises for a number of reasons: the subject has a superior intelligence, a new problem, observes a new phenomenon, has a new instrument or a new analytic tool, or is utilizing a mixture of cues from different fields. "Depth" in problem-solving is revealed through a tremendous preoccupation with the problem and "a long term tolerance for ambiguity."

Ecker[116] has spoken of "art as qualitative problem-solving," and thus has inserted an important qualifier setting art problem-solving, to a degree, off from other kinds. But the question remains whether it is helpful to consider drawing as problem solving at all. It may, to be sure, be a kind of "discovered, divergent, stimulus-seeking, primary process" activity directed toward "qualitative" or aesthetic ends, and lying near the "blind search end of the continuum." But is this formulation of any virtue in the explanatory sense? Apparently there are "rules," but drawing still appears, though lawful, as a kind of qualitative crazy process game of strategy, in which the medium talks back and the rules can keep shifting until the very end.

At this point, it is tempting to turn to the more obscure or analogical language often used by artists and art critics in speaking about art. Instead I prefer another source, which while still unsatisfactory, has a certain heuristic function in my own blind search. Ehrenzweig[117] has recently spoken of creative thought as seen in drawing as a gradual advance in successive stages, each opening into new possibilities, unforseen to a degree, then closing into clarity; thence into subsequent stages, and into integration through combinations made in progress. If I drop out the psychoanalytic constructs which Ehrenzweig leans upon (and which I think are unnecessary as explanations), this simple formulation is consistent with what I have gleaned from Alexander, Morris, and Gombrich on the one hand, and from Miller, Galanter, and Pribram, Bruner, and Newell, Shaw, and Simon on the other--especially if we restrict our attention to what Simon calls "creative problem solving." In common with Ehrenzweig, Bruner[118] speaks of appropriately open and appropriately closed phases to ideation, and of "retreat" to personal metaphor or lower levels of representational modes for knowledge when blocked. In like fashion, Beardsley[119] analyzes "preconscious" processes (apparently the seedbed for intuitive and illuminative ideas), into gestalt strengthening and associative components which, taken together, become the preconscious and inventive phase of the creative process, alternating with a conscious and selective phase, the latter being critical or evaluative. Rhythmical cycles thus emerge, in which the entire process of making a drawing would consist of stages, each gradually advancing through "preconscious and conscious" phases, which would find their equivalent in still more molecular structural units composed of the actual transformations or operations sought, selected, applied, and compared or evaluated. I get the image of a fugue which gives the impression of great detail and order in retrospect but was not at all that way in its actual parts and organization, in prospect. Or this checks with Alexander's and Morris' notion that an attempt to clarify or differentiate components of drawings leads naturally to component relations and larger organization. Such formulations are in a pre-explanatory phase, with a heavy component of "hope" in them, or at least a big leap from one level to another of the problem.

Just what the preconscious is, no one has helped me to understand. It is perhaps a retreat into the strangeness of perception that Gibson speaks of (the "visual field"), or Fiedler's lingering at the stage of "pure perception," or Ehrenzweig's cross-eyed "unconscious scanning" or "diffused attention" which is thought to lead to "or-or" structures (disjunctives, or mutually exculsive variations of a theme), or James' "consciousness" which cannot be attended to directly.

Perhaps the entire notion of a "preconscious" phase is unparsimonious. McKellar[120] speaks of an "authorship-editorship" relation which holds between "autistic" or free-association thinking and directed thinking.[121] And Berlyne, who has, as an "integrative neoassociationist," taken pains to set up autistic as distinct from directed thought, and stresses the dependence of the latter on "transformational chains" (see footnote 121) nevertheless states that "...transformational and free-associative thinking must usually interact and collaborate in practice." The way an artist or thinker recognizes an appropriate route or heuristic is not know. Progress may have some relation to "conflict reduction."[122] Even problem-solving simulated in computers alternates between running through lists and selecting or applying an operation.[123]

Berylne[124] further states: "Symbolic structures must...store information in at least three forms which are at the disposal of directed thinking; transformational chains, free-associative chains of situational thoughts, and free-associative chains of transformational thoughts." Beardsley[125] believes that the psychological dispute about what goes on in the preconscious can be resolved by stating that both "associative processes" and "closure or strengthening of gestalts" are involved, or a work of art would not get done. To a great degree, both Berlyne and Beardsley are admitting that, in terms of the arguments in this paper, there is a circulation or scanning of "idiosyncratic symbolic" stuff, or "sense," and of schemata or schematic drawing operations. Thus, it is possible to surmise that "implicit drawing" takes place to make actual drawing operations possible and to scan freely alternatives for resolving subjective uncertainty or arousal or what we sometimes in art education call "motivation."

Certain conditions within the organism are now felt to be related to exploratory behavior, and to what Getzels[126] earlier called the "stimulus-seeking" side of the organism. Berlyne[127] defines two kinds of exploratory behavior.

> "...specific exploration is occasioned by an aversive condition that may be called 'perceptual curiosity'...brought on by incomplete perception of a sector of the stimulus field, which leaves the subject with some uncertainty regarding its characteristics. ...Diversive exploration...has the function of introducing stimulation from any source that is 'interesting' or 'entertaining." It is exemplified by the various activities through which human beings seek 'amusement,' 'diversion,' or 'aesthetic experience.'"

Berlyne then goes on to relate "specific exploration" to "directive thinking," and "diversive exploration" to "autistic thinking," thereby tending to take "aesthetic experience" out of the "problem-solving" field reserved for directed thinking.

It is now clear that a resultion to my own conflict and uncertainty becomes possible. As stated, I feel there is no useful function served by calling the production of a drawing a problem. This is the schoolman's distortion of a process to fit instructional language and control, and those of us who teach art know that our instructional "problem" often arises from the fact that we have structured a problem for the performer. In this context, I am inclined to follow the reasoning of Beardsley:[128]

> "What is the problem? It might be: 'How can I make a good drawing using these lines I've already drawn?' or, 'How can I make a good sculpture out of this block of marble?' But these are queer things to call problems: they are really tasks, the terms of which are voluntarily accepted by the artist. The main question involved in each of these is simply: 'What do I do next?'"

But across a series of drawings or works, something like directed thinking, learning to learn, or in the case of the young child and chimpanzee, unfolding or differentiated development occurs. In the instructional setting, therefore, and in developing a sketchy theory of learning in art, the process-product argument can be resolved, and the problem or product of learning made that of the sequence itself, of the series of directional processes. The child and the mature artist alike face this problem, though on differing levels of complexity and consciousness. Learning-to-learn, therefore, whether conscious or not, becomes the problem in art, and the term directed thinking can be applied to it.

The individual work, in contrast, has more in common with diversive exploratory behavior where the goal is unclear and the subjective uncertainty or conflict the prime mover. At times a "classic work" for each subject will occur, the nature of which is, in a sense, a verification of a nearly fully intuited transformational chain arising out of the series of works of which it is a part and made possible by the "feel" of the series. Thus the potter or draughtsman will often sense he is about to make the "real thing" because his submersion in production has permitted him to project the most satisfying resolution of his natural uncertainty as to what he is after.

But, more often, the individual work, especially in the school setting, will reflect a much less clear image of what the person is after. The danger of the one good work which is not in a series (where the series itself can be an instructional and subjective problem) is that it is a "performance" and can take attention away from learning. We therefore often house good performers in school who are good to show off but may be learning little or at least nothing they might not have learned better off drawing by themselves.[129]

Thus, I am trying to present a clear distinction between the individual drawing and the sequential drawing context. The latter yields us a problem and direction, which has been called "learning to learn" and which has its reasonable base in uninstructed sequential drawings. Four out of Morris's six "biological principles of picture-making" require sequential works to be meaningful. The first, "the self-rewarding activation," does not. It suggests that the individual work may pick up its uncertainties or conflicts or sub-goals (if any), from its place in a series, but that its character is still more esthetic or like that of "diversive exploration." Further it may be defined with learning terms as meaningful or intelligent and not mechanical or rote, as discovery and not reception, and as involving some directed thinking and specific exploration as well as autistic thinking and diversive exploration. Continued drawing experience, therefore, should enable the student to handle more appealing, complex, or novel kinds of uncertainty and conflict because he has available a growing store of idiosyncratic symbolic material and schematic drawing operations with which to resolve that conflict. The language commits me to a more problem-solving sound than I intend, because I still feel that, apart from getting the work started, the problem is of a more pervasive quality, namely in the context of sequential works.

It appears, thus, that a work of art is only in this broader sense qualitative problem-solving. Even if I take a more so-called functional and obviously formal art, such as pottery, this is so. If, for example, I were to set out to make a stoneware cup for my ceremonial daily office-coffee, the latitude for variation in clay, form, thickness, lip, balance, foot, handle, decoration, glaze, and firing is virtually endless, even admitting, as I must, that I will work within my own "cup schemas." To be sure, there is the general and persisting problem of throwing a cup. Also, I generally throw a "run" of cups to get a "good" one (but cannot specify ahead of time what "good" will be). If I had never thrown a cup, I would not only have a problem but problems, and in this sense the word has some educational utility. In the example given, even with my expressed goal, if I felt a good cup for cool water on the desert was emerging, instead of one for my ceremonial office coffee. I would not be dismayed because if that is the reality that sense and context take, so be it.

Note that we are not plunged into a "crisis of meaning" where a cup or any craft object is involved, in anything like the manner where we deal with picture-making. This is true to a degree even though the boundaries between craft, painting, and sculpture are breaking down, and even though some "pots" could not possibly hold anything and were not intended to.

Another important point concerning the general topic of art strategies in the context of sequential drawings, is that of specifying what takes place in a strategy, or better, in a drawing itself. There is an interest in specifying operations in problem-solving and thinking converging from many sources. "Operations" are foremost in the system of Piaget[130] in his discussion of the development of thought and logic in the child. In computer simulation of problem-solving it is necessary to define the operations to be performed to transform information in one form into another closer to the solution. Berlyne speaks of "transformational chains" as the key to "directed thinking." Since they are "derivatives of overt responses that regularly result in particular kinds of environmental change" (p. 123), it would appear that the earlier formulation stating that drawings come from drawings is not at all erroneous, providing allowance is made for both the symbolic and operational side of drawings. As in directed thought, any one transformational chain in producing a drawing must "...on the whole...depend on the information contained in the subject's symbolic structures and cannot rely on periodic replenishments of information from the outside world."[131]

Just what are the components of a transformational chain in drawing or of a drawing strategy? (By the way, I must agree with Berlyne that the phrase "transformational chain" has certain advantages over the fuzzier "strategy," in that it embarrassingly asks one to "put up or shut up." "Strategy," however, suggests the cognitive structure of the subject better, in its emphasis on hierarchy, or verticality, as well as in order, or horizontality. I will thus retain both terms, and attempt to speak of the transformational chain of a drawing strategy.) As a first step toward answering the question about the contents and dynamics of the transformational chain of a drawing strategy, it is necessary to clearly re-establish the dialogue which is drawing.

> "Each time the artist...takes a step, he adds something to what is already there (A), and makes another and different object (B). If he judges B worse than A, he must go back. If B is better than A, the question is whether it is good enough to stand alone as a work of art. If not, the question is whether B can be transformed into still another and better object, C. If this is impossible, if every attempt to improve it only makes it worse, then the whole project is left unfinished, for it is unfinishable."[132]

The first step taken Beardsley calls the "incept," and feels may be any sort of thing: "...the first sentence of a story or the last, a simple plot situation, a character, theme, scene, figure of speech, or tone or style." (297) Any sort of thing of esthetic or psychological appeal will do for the first step because "...the crucial controlling power at every point is the particular stage or condition of the unfinished work itself, the possibilities it presents, and the developments it permits."[133] In support of this position, the same author presents a revealing passage from Valery[134] who feels that poetry proceeds by means of "...word combinations, not so much through the conformity of the meaning of these groups to an idea or thought that one thinks should be expressed, as, on the contrary through their effects once they are formed, from which one chooses." In similar vein, I could cite many examples of the larger transformations a work has gone through before its completion. Often this process material is lost, but where it is retained, many revealing changes occur. In Yeats' Byzantium poems where a record of their development has been preserved,[135] many of the meanings are completely reversed from earlier to later versions. And it is common in the visual arts nowadays to allow for Picasso's dictum that a painting may be the result of a sum of destructions. Some years back at Ohio State University, process photographs of certain painters were spoken of as indecipherable as to directionality if time clues to order were concealed. The stages, in other words, were large and startling transformations. In drawings, however, with an essentially additive medium, this will be less likely in the larger sense but completely likely in the chain sense. Why this should be so requires discussion.

In symbolic behavior as in overt behavior "...the associations that a subject possesses may link up to produce a chain that he has never used before. In directed thinking, this may take the form of inference or of the random reshuffling to which a subject may resort when his established hierarchies leave him at a loss."[136] In addition, as Alexander, Morris, and I have tried to suggest, drawing changes drawing by differentiation, sharpening, thematic variation, idiosyncratic symbolic inputs, and general lap-over from one work in a series to the next.

Two further concepts strike me as appropriate to the drawing incept and process: the first is that of "recursive anchoring," the second "adventurous thinking." "Recursive anchoring" has been compared by Berlyne[137] to the technique by which a person is rescued who has fallen through a hole in the ice on a pond. A human chain is formed. "As long as the first member of the chain has a solid foothold on land, his security is transmitted throughout the chain until it ultimately reaches the victim, who is therefore prevented from sinking." Analogies are suggested to Gombrich's "schema and correction" formula for drawing. In fact, it is suggested, as Beardsley stated, that any beginning will do that serves the artist's purpose to engage himself in the chain. An "as if," or something taken "for the sake of argument" or an "improvised theme" will also fill this definition. In my own research, where I deal with "inside-the-head" and "outside-the-head junk," these labels are intended to designate no more than the broadest control of conditions for purposes of studying their motivational effects, for in each the appropriate point of "recursive anchorage" is seen as necessarily mediated through the subject's perception and choice. This choice, in fact, is part of the reality of this very learning, and many subjects must learn to establish some idiosyncratic symbolic or drawing base anchorage in their incept. This is one simple point of what "to think like an artist means" to me. In this I differ slightly from Lowenfeld, for the "what" is as holy as the "how." The "what," in fact, is the "how" of the incept.

The label "adventurous thinking" used by Bartlett[138] is a poor one for this next point, but his research comes closest to what I wish to communicate. Structural analysis in scientific study of forms in nature designates the "branched structure," or "dendritic form," illustrated by the common tree, as that of an "individual," which occurs "whenever a protuberance has an advantage over adjacent areas in getting more matter, heat, light, or other requisite for growth...All these branching structures start from a point and grow lineally, but they eventually stop as the branches interfere with others already present" (or some "extraneous obstacle"). An "inverse mechanism" is seen in the example of "the successive joining of many small streams to form a single large river."[139] I dwell on these analogies for a reason, soon to become apparent.

"Adventurous thinking" in Bartlett's[140] example, is in a problem-solving context. He states that:

> "...when a thinker is working in an open, or relatively open system... he inclines to prefer the evidence which releases the greater rather than the smaller number of possibilities...The working, though not the formulated, rule seems to be that it is better to explore along the line of the greater number of possibilities, because it is more likely that the one sought will be found when there are a lot of chances than when there are only a few."

Thus, returning to Ehrenzweig's[141] earlier point describing the creative process as a gradual advance through unpredictable stages, I see a connection in that one can get into the drawing through a beginning stage, or subjective recursive anchoring, which then fans out through tree-form possibilities intellectually unforeseeable as "lists" of symbolic and transformational branches are evoked or stumbled upon in context. Unlike the solution-bound logic of problem-solving, we literally, as in the instructions to the Goodenough-Harris test, "draw the best man" that we can at the time, putting this, that, and the other thing in. For there is no reason to feel that a search of the branches at a node means that only one will followed to the exculsion of other alternatives, in the drawing case, for indeed selected but opposed alternatives generate their own aesthetic and psychological appeal. Thus, in drawing, as in autistic thinking or diversive exploration, we may deal simultaneously with what Gombrich (1965) calls "the consonance and the dissonance of multiple meanings that interlink in the structure of artistic symbols" but we denied expression in our ordinary directed thinking, discursive logic, or problem-solving behavior. This revelation of the route and this clatter of symbols and schemata across matrices has always been a part of art, and all creative thought, but is apparently a conscious part of contemporary art.

Also, unlike problem-solving and much directed thinking, drawings run their course. As I recently put it: "We can draw, no matter how well or how badly. When we get there, the cupboard somehow isn't bare." Because diversive exploration and an esthetically directed transformational chain toward no clear solution but completion of its course, is involved, there are degrees of subjective success or failure only. Drawings are more rarely blocked and left unfinished or rebegun than might be supposed. In the last 100 drawings I have recorded processes on, only has this happened in one or two instances. Even admitting the possible effect of the research context, this is different from problem-solving as typically construed. In short, whether art educators quiver or not when it is said, free drawing is "serious fun" (or at least "self-rewarding activation," following Morris).

It is now time to return to the concept of strategies of drawing. Since Burkhart and I[142] have presented this concept elsewhere, I will not sketch in its origin here or draw from these sources except as points from them clarify my purpose in this paper. The main position is that the shift from a product to a process focus, from qualities in the work to patterns in its production, is helpful in the conception of change in sequential drawings (in itself a process viewpoint). Emphasis on "process realities" is not new in education. According to Brownell,[143]

> "...we need infinitely more process studies, for such studies yield the data and give rise to the insights that can affect teaching most directly. Process studies are not to be taken lightly. They are time-consuming, and they are especailly susceptible to the charge of yielding unreliable, if not invalid, measures."

Schulz[144] questions the usefulness of process-tracing:

> "Process-tracing experiments, in which the experimenter analyzes peoples' responses to see what they do in achieving a solution to a problem, are argued to have limited usefulness because such experiments seem to assume that events observable during problem solving are themselves the causes of problem solving behavior."

In another passage, Anderson[145] comes even closer to a critique of the strategy concept:

> "What is alleged to *happen* when a person 'executes a step in a strategy?' Does the essential part of a 'step' consist of 'thinking' for any particular 'step' are these words and what accounts for their efficacy? If 'steps' are nonverbal or not necessarily verbal, how are they to be conceived? Or, perhaps we are *not* to imagine that there are actual events inside the person that constitute the strategy, but merely that the person behaves *as if* he were executing a stretegy."

My own opinion is that it is too early to answer such questions and certainly much too early to discard the "drawing strategy" concept. So far, it has proved fruitful in research and generated a number of hypotheses. Recently, for example, Wise[146] has shown that students classified before experimentation as using what Burkhart and I called the spontaneous and divergent drawing strategies performed significantly better on expressive qualities linked conceptually with their strategies, suggesting a matching tendency within a strategy between the symbolic and schematic poles earlier discussed. Using drawing strategy terminology, a superior performance in expressing "interaction" is predictable for such spontaneous strategy "components" as movement within shapes; erratic, wandering fine lines; action gestures; and direct, abrupt, quick motions. On the opposite side, the divergent strategy can better match the expressive theme "isolation," by utilizing such strategy components as elimination of non-essentials (less cluttered), single element focus; static, spatial suspension, floating (no base line implied); and fine line control (the clearly "isolated" line). This finding would tend to support Gombrich's thesis that one expresses well only what can be constructed or "matched" from one's existing artistic means.

Another instance of the usefulness of the strategy concept is in judging itself, where it appears that a judge is inclined to bias his judgment of aesthetic quality in drawings toward his own drawing strategy.[147] This bias, however, does not extend to his ability to discriminate between the strategies themselves, for he can do this very well.

My third argument for the usefulness of the strategy concept is that it has brought into question the earlier emphases in research on the relationships between art and personality, which were lop-sided, overdrawn, and value-laden. In this context, I refer to research in which I, Burkhart, and others[148] were engaged, where we sought for the creative personality. There are undoubtedly general personality correlates of drawing strategies, but these are not qualitatively important, but historically. Kagan[149] has recently pointed to some of those characteristics in the young child that suggest a match with strategy selection (or learning):

> "It has been established that the tendency to be impulsive or reflective in selecting ideas for action is an extremely stable trait that generalizes across a wise variety of tasks."

Kagan then attempts to relate this "stable trait" to educational methods and concludes that:

> "...the method of discovery is most appropriate for highly motivated older children who might have high dependency conflict and who are inclined to use a reflective strategy. This method is least appropriate for younger children...who do not have high motivation to master intellectual tasks and who tend to be impulsive."

Recent evidence, however, including a number of theses underway, the earlier study by Burkhart and me,[150] and my current research,[151] indicated convincingly that, overwhelmingly, the incidence of the spontaneous strategy as identifiable in drawings, is dependent on the amount of art training a person receives. The higher the level of training, the more the instances of spontaneous strategy. Therefore, personality correlates are not sufficient to suggest possible explanations of strategies. Superficially, it would thus appear that in art training the reversal of the "strangling of the preconscious," which Kubie[152] equates with most education occurs.

A digression is here required. Kagan, in the quotations presented, seems to match the discovery method to the reflective child, which suggests a connection with the divergent strategy. A recent study by Getzels[153] with art students, however, indicated, through observational records of the students at work in a "structured" setting where their choices of objects and general art behavior could be observed, that a high correlation existed between judgments of their art on originality and what was called a "discovered problem-solving process" score (.90, with aesthetic quality and craftsmanship held constant) but negatively with their capability in a "present problem-solving process" (-.30). Further, craftsmanship (with aesthetic quality and originality held constant) correlated negatively (-.53) with "discovered problem-solving process" but positively with "presented problem-solving process" (.47). Overall aesthetic quality, however, when originality and craftsmanship were held constant, did not relate to either the "discovered" or "presented" problem-solving process. Further, the "high discoverers" had significantly more shows or exhibits to their credit.

Getzels study is provocative in that it suggests that the trained and exhibiting art student is likely to combine aesthetic quality with a drive for originality and novelty and that the behaviors he has learned may not relate highly to abilities for solving "presented" problems, whereas those combining aesthetic quality and craftsmanship may, conversely, do poorly on "discovered" problem-solving. The difficulty here, however, is that we may equate these relationships with strategies and personalities and not with art training, experience, and drive for recognition. While strategies are correlated with art experience, the divergent strategy (in a strong form) seems to emerge with greater frequency in the moderate range of art experience whereas the spontaneous strategy progressively increases over the art experience continuum. Confusion enters perhaps, in applying the term at all to lesser levels of training, even though such an application, as in the study of Wise at the college level with untrained subjects, has demonstrated the value of doing so. Drawing-wise, it makes sense; personality-wise and quality-wise, I feel confusion arises. I am inclined to the view of Huyghe,[154] which rises above accident and fashion (although I do not support his use of "inner determinism," "fated," etc.):

> There are, on the one hand, vitalists eager to express themselves passionately, and on the other, formalists bent upon working out constructions. The art historians, to whom this dichotomy is familiar, see it as epitomized in the contrast between the Baroque and the Classical artists...For what we have here are not two aesthetic theories, freely chosen and developed, but an inner determinism, as a result of which some artists are fated to express themselves only in terms of intensity and others in terms of harmony...This particular instance shows that even where a physiological imperative seems to determine man's course, art maintains its freedom, for its value is equal in either conception...the only consideration that counts being the creative quality.

Another European writer[155] claims that these distinctions hold even in the art of children:

> Each of the two worlds has its own particularities. One is dominated by the mechanism of separation, of what Bleuler called "Spaltung;" the other, by that of joining or connection. The first world tends to immobility and compensates through precision for what it loses in dynamism. The other, oriented toward movement, often errs through impreciseness of form.

It seems to me that personality correlates and shifting cultural fashions are to be discounted in the study of drawing strategies in favor of the view that "...art maintains its freedom, for its value is equal in either conception." My own natural reaction, presently, is to "push" the divergent strategy, since it is misunderstood and less frequent in its complex and higher form than the spontaneous strategy. But even this tendency toward a corrective emphasis is to be resisted. My role is to describe, and it cannot matter directly whether the frequency of high exemplars is low in one strategy or not.

Lowenfeld suffered somewhat from the corrective emphasis he placed on "haptic" as opposed to "visual"--terms he felt happiest about applying, by the way, from adolescence on. In his later life[156] he spoke out quite frequently against "cubby-holing" people. Gombrich has described the general habit of mind created by typologies:[157]

> "It was the intellectual fashion in German art history to work with contrasting pairs of concepts such as haptic-optic (Riegl), paratactic-hypotactic (Coellen), abstraction-empathy (Worringer), idealism-naturalism (Dvorak), physioplastic-ideoplastic (Verworn), Multiplicity-Unity (Wolfflin), all of which could probably be expressed in terms of "conceptual" and "less conceptual" art. While the heuristic value of this method of antithesis is not in doubt it often tends to introduce a false dichotomy....I have attempted to stress the continuity of tradition and the persistent role of the conceptual image."

Indeed, as Gombrich also says, "all art is 'image-making' and all image making is rooted in the creation of substitutes." The trap of a typology is just that of creating a "false dichotomy." I often muse that if three clear strategies could be defined, this would not occur. (In addition, three is a mystical number). I constantly point out to my students that the strategies of drawing are not bipolar and should not be subjected to either-or thinking, even though judges making comparative judgments on these dimensions often act so. The strategies, in many ways, are unrelated, not negatively related. I base this conclusion, which flies in the face of a number of negative correlations between them, on the factor analysis of the forty criteria with which Burkhart and I originally defined them. In factor analysis, very few bipolar factors emerge, mostly there is a cluster of spontaneous or divergent criteria forming a factor by themselves. At any rate, even though strategy judgments typically intercorrelate highly negative, a bipolar continuum or typology is, in my opinion, not justified on logical grounds. The first reason I say this, is that there is strategy change or mobility over time. This change has not, so far, been directly related to treatment conditions, but then neither have conditions to modify strategy been studied. Secondly, a subject cannot use two unrelated strategies simultaneously. Thus, where conditions to effect change of strategy are not manipulated, and the majority continue to develop (not just utilize) a strategy over a "run" of drawings, a negative relationship between strategy judgments is a natural outcome. The fact that individual strategy components (such as "direct flowing strokes" in the spontaneous strategy and "strong black-white contrasts" in the divergent) correlate significantly with aesthetic quality in those cases where these strategies are being used verifies their qualitative independence of each other.

In short, it is to prevent the researcher from making value judgments outside a problem context that strategies are important. Further, they provide precision and content for the difficult task of describing temporal (chainlike) and hierarchical (vertical structure) order to what unfolds in a drawing. Thus an abstract language of words that match actual drawing operations and their flow may result. Nothing can be described in processes until systematic differences of an abstract nature can be perceived.

That strategies are accessible and conceptual to a degree is suggested by my present research. These are hunches only, for the study is in progress. With untrained college subjects, the more their previous art experience, the more they report that the stages they used could be changed but, importantly, the less they report that the overall effect of the work they were doing was clear before the last stage (of stages they themselves designate from process photographs of their drawing). In other words, stage manipulation or order and final effect seem to be inversely related with growing art experience. A person who sees his stages as invariant and also knows where he is going before the last stage, has his schemata at the mercy of predetermined and imposed symbols, and the dialogue turns into a lecture. It is, in this sense, that a drawing may be described as too much conceptual and too little aesthetic. The process stages and the meaning are held on to as relatively invariant. It would appear that the more complex and differentiated the strategy, the more its process components are manipulable as to selection and order and as to matching and meaning.

What, indeed are the components of a strategy? Can we borrow Miller, Galanter and Pribram's158 "image-plan-strategy-tactics" terminology? Or should we borrow the language of computer simulation of problem-solving as developed by Newell, Shaw and Simon[159]: "Task environment, systems of heuristics, object and operator, vocabulary for task envoronment, vocabulary for organization of processes, and goal types?" Are broader usages of terms helpful? Polya[160] for example, speaks of "problems to prove" and "problems to find." Bruner[161] and Pettigrew[162] speak of "category width or narrowness." Piaget163 uses the concepts "operation selecting" and "operation applying" and Spearman[164] of "education of relations" and "education of correlates." Various degrees of clarification come from all these sources, but it is my opinion that the computer studies take us farthest.

Newell, Shaw, and Simon[165] speak of "two very general systems of heuristics--means-ends analysis and planning." They also develop the very useful language of "goal-types" and of "methods" of achieving them within each strategy. But we can follow them only so far, for there is no "problem" to solve in the sense they are using the term, nor is there an invariant and arbitrary system of symbols, but the general utility and clarity of this approach is inviting.

Space will not permit development and analysis of these possibilities here, nor can I logically determine how helpful this attempt would be beforehand. The aim would not be to simulate drawing on a computer, though if I could do so I would put the computer to this use, but rather to put leverage on the process-language problem in art. What I would like to do here is compare the heuristic systems of these researchers with the drawing strategies.

Means-ends analysis (equivalent to the divergent drawing strategy), classifies things "in terms of the functions they serve" and oscillates "among ends, functions required, and means that perform them." It has three basic methods:

1. Transforming one object into another (desired one) by detecting the difference and producing a new or modified object which can be transformed into the desired one.
2. Application of an operator to eliminate differences between objects to which they are applied and the desired ones. Some operators make more changes than others, but all are likely to leave some features unchanged.

> 3. Some differences between given and desired states are more difficult to bring about than others. "Difficult" differences are eliminated even if this results in new differences of lesser difficulties, and so on, as long as progress occurs.

Interestingly enough, the diagrammatic structure of "means-ends analysis" created a series of horizontal transformational chain images.

The planning method (equivalent to the spontaneous strategy) is designed to:

> "construct a proposed solution in general terms before working out the details. It acts as an antidote to the limitation of means-ends analysis in seeing only one step ahead. It also provides an example of the use of an auxiliary problem in a different task environment to aid in the solution of a problem. This...method consists in (a) abstracting by omitting certain details of the original objects and operators, (b) forming the corresponding problem in the abstract task environment, (c) when the abstract problem has been solved, using its solution to provide a plan for solving the original problem, (d) translating the plan back into the original task environment and executing it. The power of the method rests on two facts...because of the suppression of detail there is a simpler problem (having fewer steps) than the original one. Second, the subproblems that make up the plan are severally simpler (each having fewer steps) than the original problem ...Like the other heuristics, the planning heuristic offers no guarantees that it will always work. It may generate no plan, a simple plan, or several plans. More serious, a plan may turn out to be illusory--it may prove impossible to carry it out."[166]

There is but one method associated with the planning heuristic and this is given above. It proceeds to abstract properties of the problem, searches for a plan, specifies a sequence of operators, if successful applies these to the original problem to arrive at the desired object. The diagrammatic structure of this strategy produces a single vertical, hierarchical image.

I have dwelled upon these computer heuristics systems because they may lead to greater insight into drawing strategies. I wish to emphasize that programmers make use of both kinds of systems, for it is clear that each has its advantages and its deficiencies. While we have not observed great flexibility in their interchange-ability in a drawing series, experimentation toward studying the effects of their mutual accessibility may be fruitful. In human learning there may be storage, retrieval, and interference problems involved, but this is not known. The mutually facilitative and complementary nature of the two strategies has been elsewhere suggested, and, to a degree, demonstrated.[167]

It is certain that work on sorting, defining, labeling and judging strategy components must continue before experimentation can be satisfactorily analyzed. The forty names Burkhart and I called what we saw merge together beginning or attack components (big organic statement devoid of detail at start; begins with single element, early inclusion of detail); perceiving-selecting or focusing components (fused solidification across objects, movement across forms and contours; only single element, single element focus, change in size or internal scale alteration); kinesthetic or empathic components (action gestures; formal distortion-static, elongated, abstract); calligraphic and speed components (erratic wandering fine lines, open and broken contours, movement within shapes; fine line control); organizational components (central emphasis, balancing out of dynamic elements, spatial network through voids surrounded by dynamic dark forms; edge contrast-edge to edge, off center composition-off balance); sequence of plan components (progressive development as an organic unit, medium overlays; variation of same element, theme and variation, carry over of pictorial theme); novelty components (incorporation of accidental forms; unexpected organizational progression); finish operations (reliance on suggestion for completeness; decorative patterns); style elements (direct forceful, flowing movements, abrupt movements, enrichment through diversity; fine line control, black-white contrasts. flatness, black-white negative reversals); etc. Thus a process taxonomy with greater logic than now apparent needs to be developed. A language specifying factors of speed, linear-painterly coverage, placement, detail, organizational plan or syntax, value and black-white range as related to coverage, form differentiation or fusion, form development, etc., is not beyond the realm of possibility. Description of stages and the operations appropriate to them, the sub-goals they serve, and their manipulation within a given "task environment" may then be possible.

It is time to leave this concept, after saying that the drawing strategies provide the best base into a process language. Having stated my belief in change as the usual outcomes of the sequential drawing context, especially where output becomes feedback to regulate the "system", I am committed to "naturalistic" studies of these processes as they are observed under minimal constraints.

The constraints on the sequential drawing context which I think would yield most in advancing a theory of learning in art, possibly transposable into instructional terms, would deal with context or "task environment," feedback, evaluation, and transfer. Under "context" I would include: learning set (induced or implicit); structure of physical stimuli or verbal structure for eliciting mental themes; specific task environment (working alone or in groups instructed or uninstructed, observed or unobserved, non-verbal communications, kinds of external constraints; the "frame" - that is, how fluid or relatively static the conditions are from drawing to drawing; the "value field" - that is, presence or absence of external and authoritative evaluation, external incentives or their absence); and because of their importance in school learning, verbal instructions and verbal evaluations deserve to be mentioned by themselves.

I would like to elaborate further on examples of the above variables. Currently I am distinguishing between "implicit learning set" and "induced learning set." It might be argued that individual differences in the form of previous art experience, dominant drawing strategy at the beginning of experimentation, and motivational and personality states in themselves suggest some "implicit learning set." This, I believe, is true; but only to the extent the researcher classified subjects according to these can he observe their possible relevance. Thus, in the study by Wise earlier mentioned, beginning dominant drawing strategy was a powerful factor related to the differential expressive capability of the student. I have found, in addition, that there are interactions between individual differences and stimuli for drawing. Untrained subjects, for example, typically assume for some time that the learning set appropriate to a physically present still-life is that of representational drawing. They do not assume this to be as true, or else cannot cope with such a set, when they draw from "mental themes." The variability observed from such drawing stimuli is much greater with art trained subjects, but they do not show as much change attributable to the two kinds of stimuli for drawings. My main point here is that the context or task environment often evokes a learning set in the student which is partly a function of the environment but also partly a function of the students' individual differences. Because this learning set is largely mediated by the student himself, I have called it "implicit."

An "induced learning set," in contrast, is predominantly mediated through verbal instruction, goal descriptions, explitic "desirable model" (this could also be a class of pictorials or a pictorial concept), what Ausubel calls "advance organizers[168] or even a carry-over from a previous highly or loosely structured task environment. The structure and form of stimuli conveying an "induced learning set" is in itself an important research topic, since it relates so closely to school instruction. The general importance of this emphasis is underscored by McDonald,[168] who says that it is "... reasonably clear that task instructions, task expectation, or set, is a potentially powerful form of task control. This effect has been demonstrated repeatedly."

It is an assumption of mine that, apart from the acquisition of certain specific skills--such as centering, opening, etc., for throwing on the potter's wheel--the kinds of induced learning sets appropriate to drawing need to be of sufficient abstractness to suggest the kind of general model and differentiation appropriate but not the specifics. Further, such learning sets should be consonant with "how an artist thinks," even though a certain artificiality adheres to making this thinking explicit in even a general sense.

"Style" and "innovation" are two such elusive concepts, in my opinion. The former suggests "sustaining" one's base into elaboration and differentiation, with or without an explicit "desirable model." The latter suggests designed "entry" of the new, and the breaking rather than the extension of established habits and associations. Both of these concepts are important in drawing, and both can be operationally defined and manipulated in a task environment, even as in our earlier study (1964) "entry" and "sustaining" questions were experimentally manipulated by teachers during the evaluative stages of a sequential drawing series. There sets, beginning evidence suggests, may to a degree interact in a complementary fashion with one's habitual drawing strategy. The person working one step ahead in the "means-ends control" heuristic appears to profit from sustaining, or from a bigger image of his stages. The person working under the "planning" heuristic seems to profit from divergent or new material. "Isolation" and "sophistication" may be further dimensions to this problem. The "flora and fauna" that can grow on an isolated island as opposed to the "latest things" from the big city hothouse. Malraux[170] illustrates the isolation concept with his statement that had El Greco remained in Venice instead of going to Toledo he might have become a second-rate Titian or Tintoretto. On the other hand, certainly the "tradition of the new," to borrow Rosenberg's phrase, suggests a somewhat conscious grasp of what has been already achieved. I will not burden this report with further operational definers of these sets as they might be introduced into the sequential drawing context, but I am convinced they can be experimentally studied and refined.

"Feedback" is a broad appellation in psychological literature,[171] but I propose to give it a specific meaning for this discussion. "Process Feedback" is its clearer designation, for this operationally means displaying to the subject at a specified time after his drawing performance and under sitpulated conditions some defined sample of that performance. For research purposes, I have favored the use of still photographs of the drawing taken without interrupting the subject a designated time intervals. Thus the amount of process "information" becomes a manipulable independent variable the significance of which can be objectively studied. "Learning feedback" is a term I reserve for information, usually in the form of verbal evaluations or judgment scales, concerning the status of a drawing with respect to an induced goal or learning set.

A digression on "learning feedback" is in order. Annett and Kay[172] feel that it is the subject's perception of "knowledge of results" that is important. But one could go even further, and assume that in drawing it is the subject's perception of the learning set itself that really counts and that "learning feedback" should serve the function of helping him decide how he is doing on his goal, as perceived. Therefore, ratings of his goal on some neutral instrument, such as Osgood's[173] semantic differential scales, could provide a base against which his later ratings of his sequential drawings could be objectively matched. On the other hand, an equally objective external rating of before and after position could be supplied by the same means. Thus variations on internal and external "learning feedback" constitute another important independent variable of the feedback family. What Kagan[174] calls "the motivation to maximize similarity to a desirable model" could well constitute a less verbal "learning set." As art educators we only need to rise above our traditional distaste for external models to see that this motive is a natural one in art, if we can believe Malraux,[175] and therefore necessary to our theories. Kagan[176] says:

> "It may seem inconsistent to state that the child has a strong motive for differentiation and an equally strong motive for maximizing similarity to an adult model...Psychological development has a spiral form in which a child identifies with a group commanding desirable goals and, after maximizing similarity to that group, differentiates from it and passes on to the next identification, in an almost never ending seesaw struggle between maximizing similarity to one model and differentiating from another."

Identification-differentiation cycles could be submitted to systematic study in the sequential drawing context if "desirable models" were made available.

Under "evaluation," I will limit myself to a consideration of some systematic procedure whereby the subject responds to "process feedback" and "learning feedback." The response is typically verbal, pitched in terms of projected changes that the subject feels will help his progress toward his goal.[177] There is no reason, however, why the evaluation response could not be pictorial-productive, as in thumbnail sketches or simplified, abstract pictorial plans or images; or why the subject could not choose from pictorial-perceptual material (which have the experimental advantage of being structured in various ways by the experimenter) samples which would help him visualize his next drawing.

Finally, by "transfer" I mean a test of the power and retention of any learning under scrutiny. One simple test is that of learning in a related but different "task environment." Thus in my current research, I intend to look at the change from the physical still-life stimulus to the mental theme stimulus and vice versa. In the general sense, however, I follow Bruner's[178] statement that "...it is indeed a fact that massive general transfer can be achieved by appropriate learning, even to the degree that learning properly under optimum conditions leads one to 'learn to learn.'" Among proofs to be sought from the sequential drawing base would be the greater and quicker learning evidenced in later sequences where learning constraints are internally selected and manipulated by the subject himself. Thus would be demonstrated "learning to learn to learn." A possible qualification is suggested by Stebbins[179] who says:

> "Whereas changes in motivation tend to bring about widespread changes in behavior irrespective of the stimulus situation, behavioral change as a function of variation in amount of reinforcement would appear to be limited to the specific stimulus condition under which the reinforcement prevails."

This may presage a blow against transfer in my "learning theory" experiments, but I perceive the subjects' motivation as stronger than the constraints. I prefer to take the easier and possible position espoused by psychologists;[180] and assume that if the subject attends to the task and to the information presented, he is likely to learn something. It follows from my massive assumption about learning taking place in sequential drawings without instruction that a large part of my design is to keep the subject at this task, observe what I can, and study the variation of a few factors at a time. Thus I have, in present studies, thought more of individual differences (three factors are included) than of manipulating conditions (two factors are included).

Quite important under the topic of transfer is a test of how the subject operates in a slightly changed context when controls on induced learning set, process and learning feedback, and evaluation are relaxed. In this way the researcher would observe whether the subject's implicit capability to learn to learn over a series of drawings has been improved.

Criteria for Learning to Learn in Art although it may appear obvious and like circular logic, an experiment should include criteria for evaluation which match its experimental conditions. Thus where "directionality" and "uniqueness" are present as "indiced learning sets," criteria oriented toward these are essential. "Directionality," further, has an intraindividual connotation to it, which suggests that variation and differentiation from the subject's own beginning benchmark is a proper focus. "Uniqueness" suggests, on the other hand, a comparative interindividual frame of reference, for my convention what is unique is rare in a sample. For the first time, to my knowledge, we can attempt to judge "directionality" through drawing strategy criteria, observing their increased differentiation, complexity, and ordering from one drawing process to another. Whether "uniqueness" or "originality" can be functionally separated from global "aesthetic quality" judgments is unclear, it having been done successfully at sometimes and not others. The recent study of Getzels,[181] in which he partialled out the part played by "aesthetic quality" and "craftsmanship" from "originality" may be a desirable model to follow.

I have commented elsewhere[182] on the "criterion problem" in art and will not reopen the entire issue here. Suffice it to say that structural and gestalt phenomena are at operation in the "phyiognomic" or "tertiary" and "contextual" properties of the aesthetic in art, and that these are partially sieved and distorted by the art training and personality of the judge. It is the researcher's responsibility to face and account for these phenomena to the best of his ability. It would not make sense to exercise control over individual differences of subjects and over task variables and ignore those attributable to judges and judgment variables. I am indebted to a doctoral student for this quotation from Hume.[183]

> "...but where are such expert critics to be found? By what marks are they to be known? How distinguish them from pretenders? One person is more pleased with the sublime; another with the tender; a third with raillery. One has a strong sensibility to blemishes, and is extremely studious to correctness; another has a more lively feeling of beauties, and pardons twenty absurdities and defects for one elevated or pathetic stroke. The ear of this man is entirely towards conciseness and energy; that man is delighted with a copious and harmonious expression. Simplicity is affected by one; ornament by another."

Or, if one is inclined to irresponsibility or humor as well as to despair, consider from Proust[184] the

> "...fantastic formula of Swann's which used to mislead people who take everything literally: 'One-fourth is the interpreter's own invention, one-fourth is sheer madness, one-fourth makes no sense and the remainder is La Fontaine.'"

Suffice it to make the simple-minded statement that those who weary at the labor of facing the criterion problem in learning in art are not made for the task, but it is my conviction that the task is far from impossible and its very difficulties are among the greatest challenges in the psychology of art. Nor are we to be mislead by psychologists such as Michael[185] who panic at the very term "aesthetic quality." Psychologists will not solve our criteria problem; they can only help us with our methods of investigation and control.

We can deploy our attack by checking, as indicated, what we set out to influence as well as aesthetic quality, and we can become more purely descriptive as befits a young field of study. Progress has been made in "breaking the aesthetic atom," even though this success is a temporary defeat, since we suffer from what I have called "humpty-dumptyism"--we don't know how to combine the separated components, so that "global" judgments are more sensitive in recording change and learning than are discrete or differentiated ones. But, then, what person in a drawing tries to achieve pervasively one differentiated descriptive criterion, such as "ragged edges?" Nevertheless, studies[186] like those of Bernheim and Rouse and, in processes, the drawing strategy components singled out by Burkhart and me, are of great importance. The structural interdependence of drawing strategy components makes them more readily combinable, for they are more an organic part of the subject's own "aesthetic heuristics." Yet, we know little about whether we have named the right criteria or about how they combine. We have merely been lucky enough to find that they seem to combine as simple additive parts. How they emerge and combine and whether these are the best units remains in question.

Summary and Critique

In brief, I have attempted to set a more or less intact base for the study of learning in art upon "learning to learn" to draw as it is exemplified in the sequential drawing context in the absence of instruction. I have thus thought to protect myself from excessive generalities or an excessive catalogue of the atomistic, by seeking some vision of dynamic wholeness which still does not rely on vitalism or lapse into nominalism. Thus all experiments dealing with this context have a "naturalistic" aspect to them complementing the desire to control for individual differences and to manipulate the learning environment. The studies of Kellogg, Alexander and Morris have aided me in examining descriptive and explanatory aspects of change in this context. They have also been focused on drawing itself and suggest the cybernetic image of a regulated open system directed by feedback of its own output. This system is seen as changing under form differentiation, perceptual sharpening, and calligraphic and thematic variation. Idiosyncratic symbolic material, entering conceptually with the advent of pictorials in the young child, early set the tension between sense and seeming echo, or contrived message and contextual meaning, or evoke the concept of symbolic transformation, or the making of a functional substitute for some individual needs. In early life these symbolic forms are "created almost out of nothing by each individual, thanks to the use of representative objects and mental images, all of which supplement language...to permit the fullest possible expansion of the ego as distinct from material and social reality."[187] With growing age, idiosyncratic symbols and drawing schemata and operations are in continual interplay in making-matching and matching-making, through extension and correction of the drawing schemata themselves.

Drawing is not seen as a problem in the sense typically implied in discussions of learning and problem-solving. It is closer to autistic thinking and diversive exploration than to the directed thinking illustrative of most problem-solving process than the presented problem-solving process. In a given drawing, what some writers term preconscious activity is directed thinking, are involved. These appear to occur in problem-solving also, but the emphasis is different. The concept of stages of creative thought which gradually advance without a clear perception of stage to stage beforehand appears to fit drawing, where the basic question is taken to be "What do I do next?" More trained subjects maintain their suspense and surprise concerning the outcome of their drawings, but do not see their stages as invariant or inflexible in their order. Nevertheless, the possibilities in drawing are so endless that more or less conscious heuristic systems or strategies are developed and manipulated by experienced subjects. Over time or within a drawing series, these strategies appear to differnetiate themselves into increasingly complex systems of drawing transformations and plans. These strategies are not so much opposed to each other as unrelated, and each has its virtues and limitations. Though there are personality and experience correlates of strategies, such relationships are more historical than logical and necessary. The language of computer-simulations of problem-solving appears to hold promise for further elaboration of drawing strategies.

When a sequence of drawings occurs within a controlled contex, something more akin to direct thinking and conscious inner-mediation of learning occurs. The constraints that appear fruitful to the topic of learning in art were classified according to four key concepts. Under *context* or *task environment*, *learning set* was the central term, further divided into *implicit* and *induced* learning set. Under *feedback*, *process feedback* and *learning feedback* were defined. *Evaluation* was defined as the subject's action upon the two kinds of feedback. It was further suggested that this action could be verbal, pictorial-perceptual, pictorial-enactive, or combinations of these. Under *transfer* it was advanced that in addition to applications where constraints on learning are applied, a true test of capability to learn to learn occurs where such mediation is implicit in the subject's self-direction and shows improvement over a pre-treatment series.

Finally the criterion problem as related to sequential drawing changes was discussed, with the simple recommendation for the use of learning criteria which match the learning constraints under scrutiny as closely as possible. Induced learning sets for style or directionality and uniqueness or originality were taken as illustrations. It was further recommended that control of individual differences and learning constraints be balanced by control of judge differences and judgment constraints. The problem of analytically separable or discrete criteria as opposed to contextual global or gestalt criteria continues unresolved despite recent progress.

I have tried not to conceal the fact that a discussion of learning in art, even in a context such as I have chosen, is highly speculative. It may even turn out to be in some ways a work of fiction (and therefore art more than science).

It is now time to attempt a critique of what I have attempted. The word "automation" in describing sequential drawing as "a learning automation" is obviously wrong, but I wished to make a point through this crude metaphor. The process is of course dynamic and, as any artist knows, change, value, direction, and learning are not always attendent on one another in the continual practice of one's art. They are, however, more the case than not, and they provide an on-going context removing our gaze from static and single works to flow and change-even decomposition, if it occurs-and therefore to learning or its inhibition.

Though Gombrich[188] says that all art is "conceptual," or at least "more or less conceptual" (a significant qualification), and though Harris's[189] extensive reviews lead him to similar conclusions on the art of the child, art is certainly not completely conceptual in our ordinary usage of the word, though its production may be mediated by concepts. The "aesthetic" as opposed to the "artistic" leaves us with the impression, however hard to formulate, that the former deals with the "sensuous" as "immediately given" in our experience. It may be argued that even this is conceptual, but the opposite point is worth the making.

> "Art is not the expression or the embodiment of experience which is mediated by means of concepts. Such expression of experience is reserved for language. Art is the only form of expression devised by man to embody the immediate sensuousness of his living experiences."[190]

My only qualification would be that even this quality is conceptually manipulated in the open-closed, symbolic-schematic cyclical business which is drawing. Aesthetic and autistic "thinking," diversive exploration, specific exploration, and directed thinking all occur in a drawing series and all process "mental stuff" and lead to selective arts, even when such mental contents "represent" what it is in immediate experience to "color," to "form," and to "move." If by dint of practice and time I "no longer think" as certain operations are applied in throwing a pot, and even when a particular "habit family" or "transformation family" is so elided that it seems to occur between my fingertips and the clay alone, this I consider only "less conceptual." As Piaget has argued, thinking preceded and is broader than language, and, at base, includes those symbolic products "created almost out of nothing" from mental stuff which "supplements language."

I find schools (and the general culture) devastatingly foreign to the lore of art; I find art devastatingly foreign to life; and I find psychology devastatingly estranged from school, art, and life. Research on learning in art is in a pinch. Borrowing, applying, and translating the theoretical stance of psychology, I have had to guard against any easy purity achieved at the expense of art, school, and life. It will not surprise me if the art and the psychology I project will not soon date themselves, if they are indeed not already dated.

I now see that instead of completing my sketches according to the "Mrs. Siddons as the Tragic Muse" approach, I have taken a nude and given her a scanty motley indeed. As Malraux and Gombrich observed about painters, regardless of what I said I would do, in practice I have to do what I can. The "schemata in the cupboard" echoed what they could as the "meaning matrices" were shuffled around. I invite your best energies, especially you younger participants, to this speculative game.

LIST OF REFERENCES

1. Postman, Leo. "Human Learning and Audiovisual Education." *AV Communication Review*, Vol. 9, No. 5, Supplement 4, 1961, p. 78.

2. For a lucid of modern biological and scientific thought see Ludwig von Bertalanffy's *Problems of Life*, London: C. A. Watts, 1952.

3. Quoted from a personal letter to the writer from Dr. Ray Human, Department of Psychology, The University of Oregon, Eugene, Oregon.

4. Estes, William K. "Learning." *Encyclopedia of Educational Research,* Third Edition; New York: MacMillan, 1960, p. 767.

5. This statement of the writer's appears in the Spring, 1965 issue of The Pennsylvania State University Art Education Graduate Club's Newsletter.

6. The term "internal locus of evaluation" is described by Carl Rogers in "Toward a Theory of Creativity," ETC. *A Review of General Semantics*, Summer 1954, *11* (4); pp. 249-260. An operational form of this concept proved superior when compared with an "external locus" in a recent study by the writer and Burkhart: See Beittel, K. R. "Effect of Self-Reflective Training in Art on the Capacity for Creative Action," Cooperative Research Project No. 1874, The Pennsylvania State University, 1964.

7. Barkan, Manual. "Viktor Lowenfeld: His Impact on Art Education." Paper delivered at the 1965 National Art Education Association Conference; Philadelphia, Pennsylvania, April 8, 1965.

8. Examples of the use of these neologisms is given here in condensed form. *Stylometrics*: Newman, Ernst. "Beethoven" The Last Phase." *The Atlantic*, March, 1953. *Iconology*: Gombrich, E. H. "Meditations on a Hobby Horse, or the Roots of Artistic Form," in *Aspects of Form,* London: Humphries, 1951. *Linguistics of Fine Arts*: Yamamoto, Kaoru. "Et Cetera - Linguistics of Fine Arts," paper read at UCLA Developmental Conference to Assay the Potential Promise of Longitudinal Study of Creative Behavior in the Arts, Santa Monica, February 18-20, 1965. *Iconic Sign*: Morris, C. R. *Signs, Language and Behavior*. New York: Prentice-Hall, 1946. *Iconic Mode of Representation*: Bruner, Jerome S. "The Course of Cognitive Growth." *American Psychologist*, Vol. 19, No. 1, January 1964; pp. 1-15. *The Psychology of Art*: Malraux, Andre. *La Psychologie d'Art*. Vols. I, II. Geneva, 1947-48; Vol. III: Paris, 1950. *The Psychoanalysis of Art*: Kris, Ernst, *Psychoanalytic Explorations in Art*. New York and London, 1952. *Art Strategies*: Beittel, K. R. and Burkhart, R. C. "Strategies of Spontaneous, Divergent, and Academic Art Students." *Studies in Art Education*, Vol. 5, No. 1, Fall 1963; pp. 20-41. *Aesthetic Morphology*: Huyghe, Rene. *Ideas and Images in World Art*. New York: Abrams, 1959. *The Biology of Art*: Book of the same name by Desmond Morris. New York: Knopf, 1962.

9. See Ecker, David W., "Some Inadequate Doctrines in Art Education and a Proposed Resolution." *Studies in Art Education*, Autumn 1963, Vol. 5, No. 1. Also see Chapman, Laura H. "Some Comments on 'Spontaneous, Divergent, and Academic Art Students.'" *Studies in Art Education*, Autumn 1964, Vol. 6, No. 1, pp. 25-29.

10. Burner, Jerome S. "The Act of Discovery," *Harvard Educational Review*, 1961, 31, pp. 21-32.

11. Lorenz, Konrad Z. "The Role of Gestalt Perception in Animal and Human Behavior." In Aspects of Form, L. L. Whyte, ed. London: Humphries, 1951; pp. 157-178.

12. "Educational Programs: Early and Middle Childhood." *Review of Educational Research*, April 1965, Vol. XXXV, No. 2

13. Geiger, George R. "An Experimentalist Approach to Education." *In Modern Philosophies and Education*, Nelson B. Henry (ed.). Fifty-fourth Yearbook of The N.S.S.E., Part I.

14. Lanier, Vincent. Reply to the writer's "Some Viewpoints on Research in Art Education," *Art Education*, December 1957.

15. Blackmur, R. P. "The Later Poetry of W. B. Yeats." *Southern Review*, Autumn, 1936, Vol. II, No. 2; pp. 339-362.

16. Marantz, Kenneth. "Indecent Exposure." *Studies in Art Education*, Autumn 1964, Vol. 6, No. 1; pp. 20-24.

17. Bruner, Jerome S. *The Process of Education*. Cambridge, Massachusetts: Harvard University Press, 1961. See also the same author's "Some Theorems on Instruction Illustrated with Reference to Mathematics." Chapter 13 in *Theories of Learning and Instruction*, E. Hilgard (ed), 63rd Yearbook, N.S.S.E., Chicago: University of Chicago Press, 1964; pp. 306-335.

18. When the writer mentioned this seminar to a woman from a related applied field of education, she said, "Oh, *our* 'concepts' are done and are currently being printed up in Washington."

19. Goldwater, R. and Treves, M. Artists on Art. New York: Pantheon Books, 1945, p. 313.

20. Kris, Ernst. *Psychoanalytic Explorations in Art*. New York and London, 1952.

21. Arnheim, Rudolph. *Art and Visual Perception*. London: Faber & Faber, 1956.

22. Wiener, Norbert. *Cybernetics*. New York: Wiley, 1948. See also Maccia, E.S.; Maccia, G. S.; and Jewett, R. C. *Construction of Educational Theory Models*. Cooperative Research Project No. 1632, The Ohio State University, 1963.

23. Beittel, Kenneth R. "Effect of Self-Reflective Training in Art on the Capacity for Creative Action." Cooperative Research Project No. 1874, The Pennsylvania State University, 1964.

24. Morris, Desmond. *The Biology of Art*. New York: Knopf, 1962.

25. Nelson, Thomas M. and Flannery, Merle E. "Instructions in Drawing Techniques as a Means of Utilizing Drawing Potential of Six and Seven Year Olds." Unpublished manuscript.

26. Gibson, James J. *The Perception of the Visual World*. Boston: Houghton Mifflin Company, 1950, p. 222.

27. Gibson, James J. Op. Cit., p. 202.

28. Anderson, R. C. and Ausubel, D. P. *Readings in the Psychology of Cognition*. New York: Holt, Rinehart, and Winston, 1965, p. 224.

29. Braine, Martin D. S. "The Ontogeny of English Phrase Structure: The First Phase." *Language*, *39*, 1963, 1-13.

30. Kellogg, Rhoda. *What Children Scribble and Why*. Palo Alto, California: N-P Publications, 1955.

31. Alexander, Christopher. "The Origin of Creative Power in Children." *Brit. J. of Aesthetics*, Vol. 2, No. 3, July 1962; pp. 207-226.

32. Arnheim, Rudolph. "Visual Thinking." *In Education of Vision*. Gyorgy Kepes (ed.). New York: George Braziller, 1965, pp. 1-11.

33. Morris, Desmond. *Op. cit*.

34. In art education there is need for some systematic taxonomy of early pictorials of children. Representational spatial properties of drawings have so far received the clearest description.

35. Alexander, Christopher. *Op. cit*., p. 208.

36. Gombrich, E. H. *Art and Illusion*. New York: Pantheon Books, 1960.

37. Alexander, Christopher. *Op. cit*. pp. 220-221.

38. Lowenfeld, Viktor. *Creative and Menatl Growth*. New York: MacMillan, 3rd edition, 1957.

39. The term "function pleasure" comes from Bühler, K. "Displeasure and Pleasure in Relation to Activity." In M. L. Reymert (ed.), *Feelings and Emotions: The Wittenberg Symposium*. Worcester, Massachusetts: Clark University Press, 1928; Chapter 14.

40. Alexander, Christopher. *Op. cit*., p. 222.

41. Alexander, Christopher. *Op. cit*., p. 225.

42. Morris, Desmond. *Op. cit.*

43. Morris, Desmond. *Op. cit*., p. 158.

44. Barron, Frank, and Welsh, G. S. "Artistic Perception as a Factor in Personality Style: Its Measurement by a Figure Preference Test." *Journal of Psychology*, *33*, 1952, pp. 199-203. See also Barron, Frank. *Creativity and Psychological Health*. New York: Van Nostrand, 1963.

45. McWhinnie, Harold James. "The Effects of a Learning Experience upon the Preference for Complexity and Asymmetry." San Fernando Valley State College, Northridge, California, 1964.

46. Morris, Desmond. *Op. cit*., p. 162.

47. Beardsley, Monroe C. "On the Creation of Art." *Journal of Aesthetics and Art Criticism*, Vol. XXIII, No. 3, Spring 1965, pp. 291-304.

48. Morris, Desmond. *Op. cit*., pp. 167-168.

49. Harris, Dale B. *Children's Drawings as Measures of Intellectual Maturity*. New York: Harcourt, Brace & World, 1963.

50. Smedslund, Jan. "The Acquisition of Conservation of Substance and Weight in Children." Scandinavian Journal of Psychology, 1961, *2*, pp. 71-84 and 85-87.

51. Bruner, Jerome. S. "The Course of Cognitive Growth," *American Psychologist*, Vol. 19, No. 1, January 1964, pp. 1-15.

52. Whyte, L. L. (ed.) *Aspects of Form*. London: Humphries, 1951.

53. Gibson, James J. *Op. cit*. p. 199

54. Gibson, James J. *Op. cit*., p. 202.

55. Woodworth, R. S. Experimental Psychology. New York: Henry Holt, 1938, Chap. 4,

56. Gibson, James J. Op. cit., p. 202

57. Morris, Desmond, Op. cit.

58. Adams, Hazard. "Symbolism and Yeats A Vision." Journal of Aesthetics and Art Criticism, Vol. XXII, No. 4, Summer 1964, p. 427.

59. Yeats, W. B. A Vision. New York: MacMillan Paperbacks Edition, 1961. (A Reissue of the 1938 book with the author's final revisions.)

60. Tate, Allen. "Yeats's Romanticism: Notes and Suggestions." The Southern Review, Vol. VII, 3, Winter 1942, pp. 591-600.

61. Tale, Allen. Op. cit.

62. Gombrich, E. H. "The Use of Art for the Study of Symbols." American Psychologist, Vol. 20, No. 1, January 1965, pp. 34-50.

63. Gibson, James J. Op. cit., p. 204.

64. Gombrich, E. H. Op. cit., (1960)

65. Polanyi, Michael. Personal Knowledge. Chicago: University of Chicago Press, 1958.

66. Morris, Desmond. Op. cit.

67. Lowenfeld, Viktor. Op cit.

68. Gombrich, E. H. Op. cit. (1960)

69. Wickhiser, Ralph L. An Introduction to Art Education. New York: World Book Company, 1957, p. 202.

70. Harris, Dale B. Op cit.

71. Piaget, Jean. "Art Education and Child Psychology." In Education and Art. Edwin Ziegfeld (ed.), UNESCO, 1953, p. 22.

72. Piaget, Jean. Op cit., p. 22

73. Notice that we fall into the trap of saying that a child "draws a symbol for a house," when it were better for art if we spoke of "drawing a house for a symbol."

74. Gombrich, E. H. Op. cit. (1951), p. 6.

75. Lowenfeld, Viktor, Op. cit.

76. Piaget, Jean. Op cit., p. 23.

77. Ott, Richard. "Children as Artists." In Education and Art. Edwin Ziegfeld (ed.), UNESCO, 1953, p. 23.

78. Ott, Richard. Op cit., p. 24.

79. Pavlov says that "...under certain unfavorable conditions, when the nervous system is weakened, ...phylogenetic division of the brain takes place anew; then probably one individual will use predominantly the first signaling system while the other will use predominantly the second signaling system (language), and it is this that divides men into artistic natures and purely intellectual abstract natures." The "artistic nature" is "analogous and close to that of animals." Pavlov, I. P., Experimental Psychology and Other Essays. New York: 1957.

80. Bruner, Jerome S. Op. cit. (January 1964).

81. Gombrich, E. H. Op. cit. (1965)

82. Gombrich, E. H. Op. cit. (1960)

83. Bruner, Jerome S. "What Social Scientists Say About Having an Idea." Printers' Ink Magazine, 260, 1957, pp. 48-52. Also see op. cit., January 1964.

84. Reid, Thomas. Cited in Rene Huyghe's Ideas and Images in World Art, p. 35.

85. Proust, Marcel. The Past Recaptured.

86. Beittel, K. R. Op. cit. (1964; CRP No. 1874)

87. Beittel, K. R. Op. cit. (1964; CRP No. 1874)

88. Black, Max. "Education as Art and Discipline." Ethics, 54, July 1944, pp. 290-291.

89. Santayana, George. Reason in Art. New York, 1922.

90. Mattil, E. L., et al. "The Effect of a 'Depth' vs. a 'Breadth Method' of Art Instruction at the Ninth Grade Level." Studies in Art Education, Vol. 3, No. 1, Fall, 1961; pp. 75-87. See also:

Schwartz, Bernard. "The Effect of Working Time and Instruction in Art upon the Process Characteristics and Aesthetic Quality of Art Performance." Unpublished doctoral thesis, The Pennsylvania State University, 1964.

91. Beittel, K. R. Op. cit. (1964; CRP No. 1874).

92. Rogers, Carl. Op. cit.

93. For recent references on the art criterion problem see the following:

Bernheim, Gloria D. "The Dimensionality of Differential Criteria in the Visual Art Product." Studies in Art Education, Vol. 5, No. 1, Fall 1964; pp. 31-48.

Beittel, K. R. Op. cit. (1964; CRP No. 1874)

Burkhart, Robert C. "Evaluation of Learning in Art." Art Education, Vol. 18, No. 4, April 1965, pp. 3-5.

Rouse, Mary J. "Development and Validation of a Descriptive Scale for Measurement of Art Products." Cooperative Research Project No. S-077, Indiana University, Bloomington, Indiana, 1965.

94. Bruner, Jerome S. Op. cit. ("The Act of Discovery").

95. Thesis proposal of Edward L. Longley, July 1965, The Pennsylvania State University. The reference is to Hale's Drawing Lessons from the Great Masters.

96. Schaeffer-Simmern, H. The Unfolding of Artistic Activity. Berkeley, California: University of California, 1950.

97. Hochberg, Julian. "The Psychophysics of Pictorial Perception." AV Communication Review, Vol. 10, No. 5, 1962, pp. 22-54.

98. Bruner, Jerome S. Op. cit. (1964 NSSE 63rd Yearbook).

99. Hochberg, Julian. Op cit., p. 30.

100. Gibson, James J. Op. cit.

101. Bartlett, F. C. Remembering, a Study in Experimental and Social Psychology. Cambridge: Cambridge University Press, 1932.

102. Pratt, C. C. "Aesthetics." In Annual Review of Psychology. Palo Alto, California, 1961, p. 76.

103. Gombrich, E. H. Op. cit. (1960), p. 360, p. 358.

104. Beittel, K. R. and Burkhart, R. C. "Strategies of Spontaneous, Divergent, and Academic Art Students." Studies in Art Education, Vol. 5, No. 1, Fall 1963; pp. 20-41.

105. Miller, G. A., Galanter, E.; and Pribram, K. H. Plans and the Structure of Behavior. New York: Henry Holt and Company, 1960.

106. Newell, A., Shaw, J. K., and Simon, H. A. "Report on a General Problem-Solving Program." Proceedings of the International Conference on Information Processing, Paris, 1959, pp. 256-264. See also by the same authors: "The Process of Creative Thinking." Chapter 3, in Gruber, et al., eds., Contemporary Approaches to Creative Thinking. New York: Atherton, 1962, pp. 63-119.

107. Anderson, R. C. and Ausubel, D. P. Op cit., p. 11.

108. Bruner, Jerome S. and Olver, Rose R. "Development of Equivalence Transformations in Children," Monograph for the Society for Research in Child Development, 1963, 28, pp. 125-141.

109. Miller, George A. "The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information," Psychological Review, 1956, 63, pp. 81-97.

110. For a discussion of mediating verbal processes in problem-solving see: Cofer, Charles N. "Reasoning as an Associative Process: III. The Role of Verbal Responses in Problem Solving." Journal of Gen. Psychol., 1957, 57, pp. 55-68.

111. Miller, G. A. Galanter, E., and Pribram, K. H. Op. cit.

112. Beittel, K. R. and Burkhart, R. C. Op. cit. (1963). Also see: Beittel, K. R. Op. cit. (1964; CRP No. 1874).

113. Gagne, Robert M. The Conditions of Learning. New York: Holt, Rinehart and Winston, Inc., 1965, pp. 58-59.

114. Getzels, J. W. "Creative Thinking, Problem-Solving, and Instruction." Chapter 10, in Theories of Learning and Instruction, E. Hilgard (ed.), 63rd Yearbook, NSSE, Chicago: University of Chicago Press, 1964; pp. 240-267.

115. Simon, Henry A. "Understanding Creativity." Carnegie Review, No. 2, 1964/1965.

116. Ecker, David W. "The Artistic Process as Qualitative Problem Solving." Journal of Aesthetics and Art Criticism, Vol. 21, No. 3, Spring 1963, pp. 283-290.

117. Ehrenzweig, Anton. "Conscious Planning and Unconscious Scanning." In Kepes, Gyorgy (ed.), Education of Vision, New York: Braziller, 1965, pp. 27-49.

118. Bruner, Jerome S. Op. cit. (1957, "On Having an Idea").

119. Beardsley, Monroe C. Op. cit.

120. McKellar, P. Imagination and Thinking: a Psychological Analysis. New York: Basic Books, 1957.

121. Berlyne, D. E. Structure and Direction in Thinking. New York: Wiley, 1965. In this book Berlyne defines "directed thinking" as a process "...that involves a chain (that is, a sequence of two or more members) of symbolic responses...whose function is to convey us to solutions of problems." (p. 19) The kinds of thinking involved in drawing, he would say, is "transformational thought." Such thoughts "...are conceived as derivatives of overt responses that regularly result in particular kinds of environmental change. Their possession enables the subject to represent to himself, and communicate to others, the stimulus situation that would result from a series of transformations, even when the transformations are not actually effected." (p. 123)

122. Berlyne, D. E. Op. cit., pp. 310-311.

123. Green, B. F. Digital Computers in Research. New York: McGraw-Hill, 1963.

124. Berlyne, D. E. Op. cit., p. 312.

125. Beardsley, Monroe C. Op. cit., pp. 300-301.

126. Getzels, J. W. Op. cit.

127. Berlyne, D. E. Op. cit., p. 244.

128. Beardsley, Monroe C. Op. cit., p. 295.

129. In an earlier study, it was found that the best performers in a group of general education college students in an art studio did their best work outside of class. See Beittel, K. R. "Predictors and Settings Relating to the Capacity for Creative Action in the Visual Arts." Progress Report, NSF GL-17984, The Pennsylvania State University, 1962, pp. 24-25.

130. Piaget, Jean and Inhelder, Barbel. The Growth of Logical Thinking. Basic Books, 1958.

131. Berlyne, D. E. Op. cit., p. 117.

132. Beardsley, Monroe C. Op. cit., p. 299.

133. Beardsley, Monroe C. Op. cit., p. 297.

Gombrich (Op. cit., 1960) in like fashion feels that any schema will suffice to get a drawing started or supply the beginning "hunch" for perception, further operations or cues then extending, confirming, or disconfirming this base, which, further, succeeds when it is simple enough to be easily disproved and modified. Herein may reside some of the "confidence" seen in a child's drawing and certainly, to the adult, much of its "charm."

134. Valery, Paul. "Poetry and Abstract Thought." In The Art of Poetry. New York, 1961.

135. Bradford, Curtis. "Yeats's Byzantium Poems: A Study of Their Development." PMLA, 75, March 1960, pp. 110-125.

136. Berlyne, D. E. Op. cit., p. 117.

137. Berlyne, D. E. Op. cit.

138. Bartlett, F. C. Thinking. London: Methuen, 1958.

139. Smith, Cyril Stanley. "Structure, Susstructure, Superstructure." In Kepes, Gyorgy (ed.), Structure in Art and Science. New York: Braziller, 1965, pp. 29-41.

140. Bartlett, F. C. Op. cit.

141. Ehrenzweig, Anton, Op. cit.

142. Beittel, K. R. and Burkhart, R. C. Op. cit. (1963), and Beittel, K. R. Op. cit. (1964, CRP No. 1874).

143. Brownell, William A. "The Study and Guidance of Learning in Children." In Education 2000 A.D. Syracuse: Syracuse University Press, 1956, pp. 123-140.

144. Schultz, Rudolph W. "Problem Solving Behavior and Transfer." Harvard Education Review, 1960, 30, pp. 61-77. Quotation is from Anderson, R. D. and Ausubel, D. P., Op. cit., p. 542.

145. Anderson, R. D. and Ausubel, D. P. Op. cit., p. 399.

146. Wise, James. "The Effects of Sex, Working Conditions, Style and Art Process Strategy on Ability to Incorporate Expressive Qualities into Drawings," doctoral thesis, The Pennsylvania State University, in progress.

147. Beittel, K. R. Op. cit. (1964, CRP No. 1874)

148. For an overview of this literature see the writer's "On the Relationship between Art and General Creativity: A Biased History and Projection of a Partial Conquest." The School Review, Vol. 72, No. 3, Autumn 1964, pp. 272-288.

149. Kagan, Jerome. "Personality and the Learning Process." Daedalus, Vol. 94, No. 3, Summer 1965, p. 559.

150. Beittel, K. R. Op. cit. (1964, CRP No. 1874)

151. Beittel, K. R. "Selected Psychological Concepts as Applied to the Teaching of Drawing." Current Cooperative Research Project, 1965-66.

152. Kubie, Lawrence S. "Unsolved Problems of Scientific Education." Daedalus, Vol. 94, No. 3, Summer 1965, pp. 564-587.

153. Getzels, J. W. and Csikszentmihalyi, M. "Creative Thinking in Art Students: The Process of Discovery." Cooperative Research Project No. S-080, 1965, The University of Chicago.

154. Huyghe, Rene. Op. cit., (1959) pp. 394-96.

155. Minkowska, F. De Van Gogh et de Seurat aux Dessins d'Enfants. Paris, 1949. Cited in Hughe, Rene, Op. cit.

156. Lectures and speeches given by Lowenfeld in his last years give repeated examples of his feeling that the visual haptic typology was being misused. Tapes in possession of Department of Art Education, The Pennsylvania State University.'

157. Gombrich, E. H. Op. cit., (1951), p. 224.

158. Miller, G. A.; Galanter, E.; and Pribram, K. H. Op. cit.

159. Newell, A.; Shaw, J. C.; and Simon, H. A. Op. cit. (1959)

160. Polya, G. How to Solve It. Princeton: Princeton University Press, 1945.

161. Bruner, Jerome S. and Tajfel, Henri. "Cognitive Risk and Environmental Change." Journal of Abnormal and Soc. Psychol., 62, 1961, pp. 231-241.

162. Pettigrew, Thomas F. "The Measurement and Correlates of Category Width as a Cognitive Variable." *Journal of Personality*, 26, 1958, pp. 532-44.

163. Piaget, Jean and Inhelder, Barbel. *Op. cit*.

164. Spearman, C. *The Nature of "Intelligence" and the Principles of Cognition*. London: MacMillan, 1923.

165. Newell, A.; Shaw, J. C.; and Simon, H. A. *Op. cit*. (1959)

166. Newell, A.; Shaw, J. C.; and Simon, H. A. *Op. cit.* (1959)

167. Beittel, K. R. *Op. cit*. (1964; CRP No. 1874); *Op. cit*., (1964; *School Review*)

168. Ausubel, David P. "Cognitive Structure and the Faciliation of Meaningful Verbal Learning." *Journal of Teacher Education*, 1963, *14*, pp. 217-221.

169. McDonald, Frederick J. "Meaningful Learning and Retention: Task and Method Variables." *Review of Educational Research*, Vol. 34, No. 5, December 1964, pp. 530-544.

170. Malraux, Andre. *The Voices of Silence*. New York: Doubleday, 1953.

171. For a review of meanings of this term see Bilodeau, E. A. and Bilodeau, I., "Motor-Skills Learning," in *Annual Review of Psychology*, Vol. 12, 1961, pp. 243-280.

172. Annett, J., and Kay, H. "Knowledge of Results and Skilled Performance." *Occupational Psychology*, *31*, pp. 69-79.

173. Osgood, Charles, *et al*. *The Measurement of Meaning.* Urbana: University of Illinois, 1957.

174. Kagan, Jerome. *Op. cit*., p. 554.

175. Malraux, Andre. *Op. cit.*, (1953).

176. Kagan, Jerome. *Op. cit*., p. 555.

177. Beittel, K. R. *Op. cit*. (1964; CRP No. 1874).

178. Bruner, Jerome S. *The Process of Education.* Cambridge: Harvard University Press, 1961.

179. Stebbins, W. C. "Relation of Amount of Primary Reinforcement to Discrimination and to Secondary Reinforcement Strength." *J. Comp. Physiol. Psychol.*, *52*, pp. 721-26, 1959.

180. For example, see Kagan, Jerome. *Op. cit*., p. 553.

181. Getzels, J. W. and Csikszentmihalyi, M. *Op. cit.*

182. See Beittel, K. R. *Op. cit*., (1964; CRP No. 1874); *Op. cit*., (1964; *School Review*); "Factor Analyses of Three Dimensions of the Art Judgment Complex: Criteria, Art Objects, and Judges," *J. of Exp. Ed.*, *32*, No. 2, 1963, pp. 167-174; "Art," in *Encyclopedia of Educational Research*, 3rd ed., 1960; "Meeting or Molesting the Muse: A Look at Research on the 'Creativity' in the Visual Arts," *Studies in Art Education*, *1*, 1, 1959, pp. 26-37.

183. Schorer, Mark (ed.). *Criticism: The Foundations of Modern Literary Judgment*. New York: Harcourt, 1948.

184. Proust, Marcel. Op. cit.

185. Michael, William B. "A Short Evaluation of the Research Reviewed in Language Arts and Fine Arts." Review of Educational Research, 34, No. 2, April 1964; pp. 249-256.

186. See footnote 93 for references cited.

187. Piaget, Jean. Op. cit. (1953)

188. Gombrich, E. H. Op. cit. (1951)

189. Harris, Dale B. Op. cit.

190. Madenfort, Wellington. "A Phenomenology of the Aesthetic in Art Education." Unpublished doctoral thesis, The Pennsylvania State University, University Park, Pennsylvania, 1965.

EXCERPTS FROM THE DISCUSSION WITH MR. BEITTEL

Audience: You said there are three stages -- the reproduction of the act, the modification by random variation, and the third stage, the modification by the built-in sharpening process. I wonder if this is necessary? Is this what we mean when we say increased sensitivity to his problem and increased handling and visualization skills?

Mr. Beittel: I guess I would say, I am thinking of it from a researcher's viewpoint. I'd rather have three concepts if they hold up than one big one. I can do more with three concepts than one if these are indeed sufficient concepts. This is just a preference, as a researcher. You can manipulate three things in more ways than a big fuzzier explanation. I don't know if Alexander is right. These are not tested concepts.They are pre-theoretical viewpoints, in my opinion. I don't know if they have any evidence to support them. I merely wish to indicate that they come from a certain community of thought of which Dale Harris has given us some of the psychological lineage, so to speak. But I don't know their real status as variables that will account for important differences in drawing.

Audience: In the feedback, when you had the drawings abstracted, you called this the "feedback", did you have the subjects write any concepts or ideas that they had about their processes?

Mr. Beittel: We had them rate their processes on either their own or given criteria -- "external" or "internal" criteria. In the later studies that I am doing now, I have the subject group his own processes into stages as he perceives them, then try to describe them. I point out to him that he doesn't need to know what these are ahead of time -- but just what he now thinks the function of the stage performed in his act of drawing. This faces the question sometimes debated by artists and art educators, whether it pays to make these things conscious. I am assuming it pays at this point, in the context of learning as a sequential drawing, to make these things conscious. I should put this down as another assumption, that it helps to make them manipulable by the individual. One thing I did not point out which intrigues me is that the more trained the subject, in just these few cases I have analyzed so far, the less he seemed to see the end of his processes at an early stage. He keeps it opened to the end more, that is he seemed to see his stages as manipulably interchangeable. The less trained the subject, I have observed, the more he sees the end as predetermined and his stages as invariant, which is the very condition of getting oneself in a tight bind.

But, as I said, in feedback the student does something with the feedback material. Now, I don't think he always needs to do something formal. In an informal case study approach in this framework, I had some subjects only look at their feedback and do what they wanted to. I provided them with paper if they wanted to write about them, and some I provided them with visuals, random visuals which were line experiments which expanded the medium and were not figurative things. Subjects were to choose among these or write what they wanted. I haven't tested this, but I believe it is equal to the other approach. I just couldn't tell what was going on as much.

Audience: Do the stages seen by a subject match those seen by judges? Would we see a similar sequence?

Mr. Beittel: It would be an interesting thing to know. I would also like to know whether his so conceptualizing them makes them seeable in subsequent drawings. This I haven't studied either. The thing about this whole experimental area is that you can only study what you ask, and you can ask endless questions. You ask all questions at some risk because you exclude other questions by the asking. I can't ask multiple questions to any great degree. One thing I did point out in the paper that I didn't mention here is my desire to make my frame work for study a little more naturalistic right now. I'm trying to observe more -- I am trying to control subject variables a bit more and manipulate treatments a little less, making very simple manipulations in the treatment category. Again, I am assuming I can't see anything unless I see a little change in this comparative frame, and this I am trying to build in with two treatment conditions and three classification conditions for the subjects, in the present studies.

Audience: But you did say about learning studies with untrained subjects and art subjects that there is more openness throughout the drawing process with the more highly trained subjects.

Mr. Beittel: This is the way they see it. That's the point I want to make. They see it this way. We haven't judged them from any other viewpoint. I can't say how it would appear to another, frankly. It is just their own perception of it. What I am saying compares with Bruner's discussion of how children's concepts as they grow older get simpler and more abstract and can handle more incoming data. So too with the strategies we have been seeing. When they do appear clearly, it is at upper levels of training, in my present feeling. I don't think they are discernable in the untrained subject to any great degree. This has some importance to me. We have not studied the conditions under which they are learned either. Nor have we manipulated this aspect directly. I have also gone through some rethinking of how personality relates to drawing strategies, and it seems to be an untenable position to say that there is any firm relationship when I see it manipulated so much by training and experience. I haven't found lately any good examples of the divergent strategy, by the way. The last sample we took of incoming art freshmen here, there were 17 out of 21 students who were all working in the spontaneous way. I don't know if this is the Penn State culture or what, but is getting much sooner to the freshmen, if this is so. Where it is picked up I don't know.

Audience: Since in the observation a series of drawings in an adult's work or a child's work or both for a period of time, we actually seem to view changes, either logical or progressive, how can you tell those changes which you have induced by treatment if you don't know and can't know what would have happened otherwise?

Mr. Beittel: I don't know what "otherwise" means. What is "otherwise"? Sometimes I look at "otherwise" like I have a person do drawings in his dorm room as opposed to the school setting. That is an otherwise. I'll put it that way. There are so many otherwises, too.

Audience: How do you know the treatment climate itself isn't the factor?

Mr. Beittel: I thought earlier to do such a study and I bypassed it. I was going to study the effects of the instrumentation itself. The only thing I can say is that when you manipulate variables and get changes, you can talk about these changes in relationship to these variables. Maybe that is circular thinking.

Audience: You would help me if you would diagram on the board the experimental design. Put o's for the observations and x's for treatment or something to give me a nolistic grasp.

Mr. Beittel: I can easily give you some designs if you like. The simple design I am working under now has classified the subjects by drawing strategy -- divergent and spontaneous (which are, I think, unrelated and not bipolar) by sex, and by training, which I will call art and non-art. Are you following me? At this point, I am bringing in my treatment variables which I will call set one and set two. That is the induced set variable; and then there is a feedback variable -- feedback one and feedback two. In my first study I am going to manipulate stimulus conditions for the set variable and read them as evoking an "implied or implicit set" -- very simply, still-life or "inside the head junk" (mental themes) as a point of departure for the drawing act. This is a very primitive level. In the second study I want to manipulate the induced set. The total design is a very simple 5 factor, 2 levels each, study in which I end up with 32 cells. That doesn't explain much. That is just the design of the thing. The design has the purpose to me of supplying the constraints under which I can observe a bit. This may be some delusion, but I think I can see more under these conditions. At least I can see whether there is irrelevance attached to the sex of the subject, if this is true. We have some evidence that the strategy that the person brings to the act, brings to the series is an important variable. The study of Jim Wise has demonstrated that it supports Gombrich, in a way. It is easier for the person using the interactive (spontaneous) strategy or the planning strategy to express interactive content, abstractly or realistically. It is easier for a person using the means-end (divergent) strategy, where things are controlled sequentially more, to express isolation abstractly or realistically. If this guarantees some or in a sense counts for some variance, this is important. When it doesn't account for the variance, I will drop it out of the classification. It has been relevant, so I am going to put it in.

Audience: I'm almost afraid to ask. What is the measurement?

Mr. Beittel: That is a good question. I had one simple-minded notion that I didn't bring out which is: always try to judge what you are trying to influence. That is so simple I hate to mention it, but that is, use the yardstick in checking broadjumping. If you mean to induce x, have a measure for x. That is a simple-minded notion. If I am trying to look at something which has to do with the effect, let's say, of the still life as opposed to what's inside the subject's head as a theme, I'll try to so orient my judgment of works to take this into account. Maybe it will be something to deal with the complexity of the drawing, or the detail. So far I would say the amount of detail would vary tremendously between these subjects--the untrained ones--between the physical stimulus and the mental stimulus, which is not a very big finding, but it would be worth the judging. Do you see what I am getting at? This bypasses value judgments, nicely, I think, but not in a way just to defend myself. I also call in a group of "experts" and have them take the drawings and judge them for qualitative distinctions. And as soon as Ecker and Villemain help me understand what this is, I'll tell the judges more.

Audience: Do you have them rank ordered?

Mr. Beittel: No, that's too clumsy with a lot of stuff. How many discriminations can be made cleanly I'm not sure. Thurstone argued for seven points. If I build up judges, and I always like an odd number and usually around five, if you have about five experts judging, a five-point scale is rather sensitive. Team to team correlations of experts, five on a team, will usually be about .80. I sometimes have them handle their drawings twice, into a good, medium and lousy pile, and good-good, average-good, bad-good--I mean I go to a nine-point scale. This they can manipulate. Rankings are pretty clumsy, and I find in an extended series bring in certain errors. One thing that I didn't stress is that this whole concept of how a strategy operates may have some relevance as a judgmental criterian. So far the hunch is that the more complex the guy's strategy, on his heuristics the more he can handle. The more he can get into his strategy, the more he can do with it. That is, the more heuristics he develops, the more parts to his strategy, so to speak, the more things he can, therefore, express. This is also like saying the more he has drawn the more he should be able to draw, if he isn't inhibited by this learning process. The more schemata in the cupboard, the more he can rummage for ideas. The more he knows of material in the culture the more he can draw from or negate, whichever you prefer. I consider them synonymous activities.

Audience: I think it is a shocking thing you are doing. Getting rid of this fine old art school tradition of the teacher telling--

Mr. Beittel: No, I'm not getting rid of this. I hope others will deal with this topic. I think these treatments represent teacher actions. I'm just trying to deal with them a little bit conceptually here. I think teachers do these things, and what they mean--I think this was brought out by Dale Harris, again--as mediated by the teachers is a very important question. They may mean something completely different from what they do in this programmed type of setting. I think this is possible. We haven't detected what it is they mean when so manipulated, but they may have a completely different meaning there.

Audience: Would you explain the difference between process feedback and learning feedback to me again?

Mr. Beittel: As I am using it, process feedback is arbitrarily assigned to mean a record

of the way the prior object emerged, an iconic record. Learning feedback has to do with knowledge, I guess what psychologists call "knowledge of results". If there is a goal, it has something to do with progress toward that goal. In the game of art, I have allowed this to be in a sense described on the one hand by the artist himself, which puts the researcher in a very funny position. He manipulates the condition under which he gets knowledge of how the subject perceives his goal, how he perceives his progress toward it. This is not to me an indefensible and irrational position to be in, although I know many psychologists would say I am nuts with this kind of reasoning. I think it has a base in the art activity, as practiced.

Audience: Do I understand that this occurred in a value-neutral climate for learning?

Mr. Beittel: It is not a classroom environment.

Audience: You remain neutral?

Mr. Beittel: I try not to give knowledge of results or my opinion on the thing at this point, that's right. Some subjects will say to me, "What the hell can you learn watching me draw?" So I say, "Look, do you mind drawing?" and they say, "No, I like to draw." So I say, "Well, okay." As I interview them later, some of them will say that they wish they would get interaction. This is part of what I want to know. Apparently, the more trained the subject the less he needs to get this interaction--maybe he has his "preferred" critic or whatever--you know what I mean--the person to react to him. But the more trained, again, the less the person has felt this social deprivation. I may have you confused, but maybe on the other side I have contributed also to the levelling of categories that Kaprow did from his side. If so, I am not sorry, but I hope we can engage in more dialogue on this subject.

CONCEPTS, ISSUES, AND PROBLEMS IN THE FIELD OF CURRICULUM

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The purpose of this paper is to identify some concepts, issues, and problems which serve as both tools and obstacles in curriculum development. The paper will deal with curriculum problems in the field of art education only incidentally; the primary focus is on general issues in the field. The scheme to be used is as follows. First, tasks typically undertaken in the field of curriculum will be identified and discussed. Second, a rationale for curriculum development will be described. Third, a formulation of levels in curriculum will be presented. And finally, suggestions for curriculum improvement will be offered.

It must be apparent that each of the topics mentioned could serve as the focus of an entire paper. The attempt here is not to inquire in depth into one problem in the field of curriculum, but to identify some important issues and to present some conceptual tools that might be useful for thinking about curriculum as a field. The content of this paper is meant to be descriptive and suggestive; not prescriptive or exhaustive. I, for one, know of no certain prescriptions to offer in this field. Indeed, if anything is accomplished by my remarks, it may be only to underscore what you undoubtedly already know: the field of curriculum is not only one of the most comprehensive in education, but one of the most complex as well.

I would like to begin by identifying three major activities carried on by workers in the field of curriculum. The first of these is that of curriculum construction. In the broadest sense, all who decide what to teach and how to organize content in preparation for teaching engage in this task. Such decisions, which are usually carried out prior to class, are what Jackson[1] has called pre-active teaching. The teacher, curriculum specialist, or curriculum committee is inevitably caught up in the problem of making predictions regarding the effectiveness of activities planned to facilitate learning among a group of students. Such activities may be short-term, designed to occur during the following class session and lasting for only one class period, or, under more confident circumstances, may be intended to span several weeks or months. The point here is that the task of deciding what to teach, to whom, in what order, and when, constitutes an array of predictions that lie at the heart of the curriculum-building process.

One of the major problems that faces anyone concerned with making such predictions -- the building of curricula -- is that of determining how to improve one's predictions. To cope with this problem a second aspect of work in the field of curriculum has emerged.

Recognizing that a variety of factors affect learning, and being concerned with the development of systematic ways of viewing the problem of curriculum construction, workers in curriculum have taken on a second task, that of formulating curriculum taxonomies. Technically, a taxonomy is a scheme that classifies phenomena according to some principle, usually according to a heirarchy. In the field of curriculum, taxonomies identify the basic issues to be treated in building curricula, the data sources that are relevant for making various types of curriculum decisions, and the type of criteria that can be applied to the materials and activities that are planned.

Educational objectives, for example, constitute one major class in most taxonomic schemes. This particular class has received an enormous amount of attention and curriculum taxonomists tend to agree that educational objectives should be stated in behavioral terms. When so stated, educational objectives provide criteria for evaluation and facilitate curriculum construction. That these criteria are taken seriously is attested to by the sign that was pointed out to me in a university office not too long ago that read: "Help Stamp Out Non-Behavioral Objectives."[2]

The various forms that curriculum taxonomies take need not be detailed here. It need only be stressed that their formulation and use is common among those concerned with thinking with greater clarity about curriculum as a field. The distinctions I am making at this moment exemplify an effort to sort out, to arrange and to classify. This task is necessary for engaging in the third task within the field.

The third task that has engaged workers in the field is that of theorizing about curriculum.[3] Broadly speaking, theory can be of three types: formal, descriptive, and prescriptive.

Formal theory is analytic and tautological and best exemplified by the fields of logic and mathematics. In the field of curriculum, however, this type of theory is absent. While it is true that some psychologists have developed mathematical models that attempt to account for some types of learning, there is no such model in the field of curriculum, as far as I know.

Descriptive theory is empirical in nature. At its least sophisticated level it is exclusively predictive and provides no explanations as to how variables are related. Common-sense theory frequently operates on this level, and as common sense becomes more predictive, precise, and powerful, it begins to provide explanations to account for the predictions it makes.

With this view, scientific theory and the theory of common sense are not different in kind but in degree. This view also holds that theorizing, in the sense of predicting, is ubiquitous in human affairs and is not reserved exclusively for those in the laboratory. An example of common-sense theory at the level of the homily is found in the phrase, "You can't teach an old dog new tricks." This assertion is essentially a prediction concerning the conditions that affect learning. For an individual to assert "You can't teach some old dogs new tricks," is to make a refinement of his theory. I will leave it to you to judge what an individual is up to if he asserts "You can't teach some old dogs some new tricks. The difficulties with such theory are evident when one counters "You're never too old to learn." Common-sense is frequently loaded with contradictions that are difficult, if not impossible, to reconcile.

The point in all of this is simply that, since predictive theorizing is a common human activity, it is to be expected that it should occur also in the field of curriculum. Indeed, as was point out earlier, the construction of a curriculum requires predictive theory -- if an individual is unable to make any predictions whatsoever regarding the conditions that facilitate learning, no curriculum can be built.

While predictions are implicit in the activities of those who construct curriculum, such predictions are seldom deduced from a logically consistent body of theory. There are many reasons for this, not the least of which is the fact that theory in the behavioral sciences is not very useful in making such decisions. Psychologists, for example, have developed learning theory mainly in laboratories, not in schools. Such theories frequently fail to meet the conditions characteristic of the classroom. In addition, learning theory, as developed by psychologists, is for the most part content-free. That is, theories of learning are generic and not developed specifically to deal with learning particular subject matters. When one adds to these characteristics the fact that such theories are statistical rather than clinical, it presents further difficulties for those concerned with the construction of a curriculum for particular students.

What does occur in the way of theorizing is based primarily on empirical generalizations developed by experienced practitioners and curriculum specialists. "This seems reasonable, this seemed to work well last semester -- let's try it again": such reasoning seems to guide those who theorize about curriculum. In short, if a distinction can be made between descriptive theory that is predictive without being explanatory, and theory which is both predictive and explanatory, it is the former rather than the latter that is available in the field of curriculum.

A theory with explanatory power in curriculum would lay out a set of assumptions concerning the nature of human learning. From these assumptions a set of theorems and hypotheses would be deduced. These might assert: If you have children at this age and state of cognitive development and if you want them to learn this type of content, then use these types of instructional methods for this period of time under these conditions. It is clear that at present we are a long way from such theory.

The third type of theory in the field of curriculum is prescriptive in character. Unlike descriptive theory with explanatory power, this type of theory is plentiful. Prescriptive theory is concerned with what the curriculum ought to be. Robert Maynard Hutchins, an eloquent spokesman for the liberal arts and an outspoken critic of scientific philosophy, has this to say about both issues:

> Since the content of liberal education is the greatest ideas that the greatest men have had, regardless of the time at which they lived or the kind of society they lived in, and since the methods of liberal education include the methods of history, philosophy, and language as well as science, liberal education can hardly arise in the face of pragmatism, positivism, or Marxism.[4]

Hutchins goes on to develop a set of assumptions about the nature of man and the role of reason in experience. He then prescribes from these assumptions and the arguments which ensue what the schools should teach and through what methods. Like Dewey, Herbart, Rousseau, Aristotle, and Plato, Hutchins employs persuasive arguments to prescribe curriculum content, arguments that are products of reflective thought. Prescriptive curriculum theory is not always so developed. Our own educational era has seen a variety of educational demands made by people who believe we are in a state of national emergency. These people would see the schools used for national security and the content of the curriculum prescribed in relation to some lag, real or imagined.

Analyses of prescriptive curriculum theories make it possible to identify three major concerns. These concerns may be described as being society-centered, subject-centered, and child-centered. Those whose concerns are society-centered view the school as a social institution that should be responsive to the changing demands of a rapidly changing society. Schools are tools, and, as tools, have no ends of their own but are assigned ends by those who support and use them. The need for a literate populace able to read the scriptures motivated the Massachusetts Bay skilled craftsmen capable of producing good competitive with those of France and England motivated, in the 1870's, the first compulsory art education bill in this nation; the need to acculturate the foreign-born to American life during the turn of the century placed still other demands upon the school. And in the thirties, with the Owattona Project, even art education was seen as a means for meeting practical social needs. In recent years the Sputnik episode gave critics who had been unhappy about American education for years the support necessary to initiate large-scale changes in the curricula of American schools.

Those subscribing to a subject-centered view believe that schools exist to teach children important subject matter and tend to establish a hierarchy among subject matters according to some scale of values. The curriculum is to be composed of these subject matters and teaching is conceived of as helping the student acquire this content. Those who call for a return to the solids, to the elimination of frills, an emphasis on the three R's, and the abolition of soft subjects, are prone to prescribe with the second focus in mind. It is seldom held in this view that the arts should occupy a significant place in the curriculum. Even though the arts and the sciences constitute two fundamental ways in which man has encountered reality, one of these ways seems to be relegated to a minor role, appropriate as relief or diversion, but not significant enough to constitute a central aspect of the school program. An example of this view is provided by Clifton Fadiman who describes, in The Case for Basic Education, the traditional education he received in high school. He writes:

> Here is what -- in addition to the standard minors in drawing, music, art, and gym -- I was taught some forty years ago.
>
> Four years of English, including rigorous drill in composition, formal grammar and public speaking.
>
> Four years of German.
>
> Three years of French.
>
> Three or four years (I am not sure which) of history, including classical, European and American, plus a no-nonsense factual course in civics, which was dull but at least didn't pretent to be a 'social science.'
>
> One year of physics.
>
> One year of biology.
>
> Three years of mathematics, through trigonometry.

He then goes on to praise the consequences of such an education by saying:

> I know how I came to be an American in 1959; what large general movements of history produced me; what my capacities and limitations are; what truly interests me; and how valuable or useless these interests are....
>
> I do not owe this to any superiority of nature. I owe it, I sincerely believe, to the conventional basic education I received beginning about a half century ago.

For Fadiman as well as for others emphasizing the importance of a subject-centered curriculum, a return to basics, tried and true, would contribute to the improvement of the curriculum and thus to American education.

Countering this view of curriculum as subject-centered are those who would have it child-centered. Best exemplified by Rousseau in the 1760's, but developed through the work of G. Stanley Hall[6] and later through the views of John Dewey,[7] this view conceives of the child as an unfolding organism, holds that his stage of maturity be taken into account in planning curricula, and urges that teachers attend to the problem of making school learning meaningful. As distinct from society-centered views which examine social needs to determine the content of the curriculum, and contrasted with subject-centered views which tend to regard certain curriculum subject matters as of intrinsic worth regardless of time or place, the child-centered theorists speak of an emerging curriculum, a curriculum that is not pre-planned but which develops from the needs and interests of the students. The end of education, and hence the function of the curriculum, is to help the child realize the capacities that lie latent within him. By attending to his interests, aptitudes and needs, these capacities are best realized. In this view no single curriculum can be prescribed which is ideal for all children. Since children differ, the curricula appropriate for their self-realization should also differ.

In attempting to outline the three foci that prescriptive theory has taken, I have drawn distinctions that are sharper than generally exist. Few people hold "pure views" relative to the number of people holding hybrid views. I do believe, however, that the distinctions are useful as a general map illustrating points of emphasis. Further, I believe it is possible to identify some of the conditions that bring each of these views into prominence. It is not difficult to understand why, in times of national crisis in realms that must be fought with weapons of the intellect, the schools should be looked to as a source of salvation.

In describing the prescriptive aspects of curriculum theorizing and the three foci that theorists have taken, I do not want to suggest that prescriptive theory is of little use in building curricula. Quite the contrary. Without a conception of what the curriculum ought to be, descriptive theory would be useless. Unless one has some conception of what is valuable, there is no way of determining the relevance of descriptive theory. As long as education remains a normative enterprise (and if it should cease being normative it would cease being education), a precriptive theory of curriculum will be a necessity.

Thus far I have identified three tasks that are typically undertaken by workers in the field of curriculum. These are the construction of curriculum, the formulation of curriculum taxonomies, and the development of descriptive and prescriptive curriculum theories. I have tried to show that these three tasks are mutually dependent. In order to build a curriculum one must have some concepts with which to make distinctions. Further, I have tried to show that, in addition to these concepts, one must be able to make some predictions concerning the utility of various alternatives, and that this in turn requires at least some conception of what is valuable and appropriate in the setting of the school.

But identification of the major tasks within the field does not resolve the problems encountered in constructing curricula. It is therefore necessary to identify the questions and issues that must be dealt with in building curricula for any educational enterprise. To do this I will turn to the work of Ralph W. Tyler[8] who, functioning as a taxonomist, has created a useful curriculum rationale.

Tyler was concerned, as we all are, with the problem of thinking rationally about the curriculum. His interest was in the development of a scheme that would make curriculum planning more systematic, orderly, and effective. What he did essentially was to formulate a set of four questions that he believed must be dealt with in building any type of curriculum at any level of schooling. These questions are:

1. What educational purposes should the school seek to attain?
2. What educational experiences can be provided that are likely to attain those purposes?
3. How can those experiences be effectively organized?
4. How can we determine whether those purposes are being attained?[9]

Using these questions as a framework of his rationale, Tyler proceeds to identify the data-sources that are useful for answering them. To determine the purposes the schools should seek to attain. Tyler suggests that sociological and psychological as well as philosophic inquiries should be undertaken, for, by studying the children and the community, it may be possible to obtain data relevant for the value judgments and predictions that must inevitably be made.

To determine the types of experiences that are related to educational objectives, Tyler suggests that subject-matter specialists be consulted as well as behavioral scientists. To organize these experiences Tyler employs the concepts of continuity, sequence, and integration, and uses these concepts to guide time and teaching sequence.

Finally, because the rationale that Tyler developed is purposeful and goal-directed, he suggests that evaluation procedures be employed to find out whether the desired ends have been achieved.

Within the general scheme that Tyler has developed, a number of concepts and principles have been formulated. As indicated earlier, the use and character of educational objectives has received a great deal of attention. Central is the notion that educational objectives be stated in terms of desired student behaviors as well as in terms of the content in which these behaviors are to be displayed. Such specification allows one to escape the problem of identifying learning outcomes that are non-empirical. Further, it is urged that educational objectives be specified within one of three domains: the cognitive, the affective, and the psycho-motor. Bloom's taxonomy of educational objectives in the cognitive domain[10] and Kratwhol's taxonomy in the affective domain[11] represent efforts to order behaviors in a hierarchy of complexity in the former, and one of the internalization in the latter in the first and second of these domains respectively.

As to the selection of learning experiences, Goodlad has suggested that such experiences (he calls them Organizing Centers) meet the following criteria:[12]

1. The good organizing center for learning encourages students to practice the behavior sought.
2. The good organizing center for learning encourages simultaneous practice of several behaviors.
3. The good organizing center planned for one area of instruction supports learnings in others.
4. The good organizing center for learning is planned with full awareness of preceding and forthcoming learnings for this particular group of students.
5. The good organizing center for learning reaches both the highest and lowest levels of accomplishment in the group.
6. The good organizing center for learning is sufficiently comprehensive to provide for a wide range of differences in students' interests and learning styles.
7. The good organizing center has educational significance in its own right.
8. The good organizing center leads beyond itself to other times, other places other ideas.

As regards the way in which learning experiences might be organized, a number of principles have been formulated. First, it has been suggested that important concepts and generalizations in a subject matter be identified. These might then be used as organizing elements which run as threads through the curriculum,from the first through the eighth grade, for example. If the generalization, "The material with which an artist works sets one of the limits of his work," was considered important for a student to understand, it would be introduced at increasing levels of complexity and sophistication as he proceeds through school. The organizing element provides continuity in planning and in learning. The different levels of complexity provide for sequence, and if the curriculum engages the student in relating this generalization in the visual arts to its analogue in the field of music, this would treat the integrative aspects of the curriculum.

A second principle that has been suggested regarding the organization of learning experiences deals with the manner in which such experiences are arranged. Within a subject matter there are generally varieties of ways in which learning experiences can be ordered. One could start with the simple and move to the complex; one could begin with the near and move to the distant; one could arrange material to maximize contrast among ideas or qualities; one could start with the present and proceed to the past or the reverse; or one could combine several of these modes where they are not mutually exclusive.

Curricula in some subject matters have typical modes or organization. The concept of "expanding horizons" in the social studies, for example -- starting with the family and moving to the community, and then the city, and the nation, and so forth -- exemplifies the principle of beginning with the immediate and moving to the remote, and is common. The history curriculum is most often organized chronologically, while the mathematics curriculum -- at least in the past -- was organized from the simple to the complex.

One of the most important principles in the area of evaluation for those who use Tyler's rationale is that the instruments used to evaluate students' learning be directly related to the objectives that have guided the selection and organization of learning experiences. To employ devices which are unrelated to objectives is to void the possibility of learning about the effectiveness of the curriculum.

What isn't always realized by those who embrace Tyler's scheme is that evaluation in such a scheme is to be non-normative in the statistical sense. That is, if a set of objectives is formulated in terms that are clear enough to recognize the behaviors if they are displayed, and if an instrument is constructed to elicit and measure those behaviors, their subsequent display would warrant the student passing the course at that level. Awarding grades on the basis of a normal curve, for example, would be unwarranted. In Tyler's scheme a student would receive a grade communsurate with his achievement, not in relation to his peers but in relation to some preconceived set of educational objectives.

This practice, however, is seldom employed. Part of the reason is that teachers ameliorate their judgments by comparing individual performance to group performance. They tend to shirk the idea of awarding all A's to a class even when all the course objectives have been attained. But there are other reasons. The assumptions employed in developing achievement tests are statistical in nature. Such assumptions are inappropriate to Tyler's scheme. One of the necessary requirements of tests is that they sort people out. The consistently finer distinctions a test is able to make, the more reliable it tends to be. If a teacher in Tyler's scheme specified objectives clearly, organized curriculum activities effectively, taught magnificently, and, upon evaluation, found that all her students passed each test item, the test, according to statistical theory, would re unreliable. Since all the students passed with flying colors, there would be no variability in the population, and with no variability there can be no reliability.

Although Tyler's curriculum rationale is indeed rational, and although the questions it poses are important ones, it does not treat a number of significant issues which I would like to identify.

One such issue deals with the way in which educational objectives can hamper the teacher. While it is reasonable to expect that the curriculum be directed to some ends and that these ends be at least vaguely specified, the scheme does not deal with the rich variety of unplanned learning that occurs in the classroom. Teachers take advantage of those moments in the classroom that are rich in meaning for students and which, in their estimation, yield important educational consequences. Educational objectives, even if they could encompass the variety of such learning, would be too numerous to be useful. A teacher would find it difficult, if not impossible, to keep in mind the array of objectives that such specification would entail.

If, however, a teacher concerns himself exclusively with helping the students attain pre-determined objectives, her single-mindedness may hamper her view of other possible, perhaps even more valuable, learning. If one asks teachers about their educational objectives in fields such as art or music, one finds that the most general types of statements are made. In Tyler's scheme this would be a liability. Yet, the careful articulation of objectives at higher levels of specificity might be inappropriate to such fields.

In the field of mathematics the formulation of educational objectives at high levels of specificity might be a necessary condition for the selection of content. If the teacher is interested in helping students understand the meaning of square root, a particular array of activities may need to be planned. Evaluation in such fields is likely to be quite specific. Contrast this with types of educational outcomes possible in painting, sculpture, or graphics. Students engaged in these activities have an opportunity to learn a variety of ideas and skills, most of which the teacher is unable to specify in advance. One student may progress in his treatment of color, another in composition, or a third in technical skill, and so forth. I believe teachers utilize these learnings and in the area of the visual arts tend to personalize the curriculum more than is possible in areas such as mathematics and physics. Macdonald writing in Educational Leadership puts the case beautifully when he says:

> Let us look, for example, at the problem of objectives. Objectives are viewed as directives in the rational approach. They are identified prior to the instruction or action and used to provide a basis for or a screen for appropriate activities.
>
> There is another view, however, which has both scholarly and experiental referents. This view would state that our objectives are only known to us in any complete sense after the completion of our act of instruction. No matter what we thought we were attempting to do, we can only know what we wanted to accomplish after the fact. Objectives by this rationale are heuristic devices which provide initiating sequences which become altered in the flow of instruction.
>
> In the final analysis, it could be argued, the teacher in actuality asks a fundamentally different question from 'What am I trying to accomplish?' The teacher asks 'What am I going to do?' and out of the doing comes accomplishment.[13]

Another consequence of adhering tightly to the Tyler scheme is that it may lead one to overlook the ancillary consequences of instruction in a subject matter. If evaluation is to be made only in relation to a pre-determined set of objectives, it is difficult to determine the negative consequences of the curriculum. It seems to me imperative that attempts be made to determine not only whether what was planned has been attained, but to assess other consequences as well.

Perhaps the most important limitation of Tyler's formulation lies in the fact that it does not specify in operational terms the way in which data sources, for example, are to be measured. Nor does Tyler indicate how to relate data on the nature of the community, on the cognitive development of the child, and on the content to be taught. What is the relationship between levels of cognitive maturity and instructional procedures with specific types of content? How does one move from a statement of educational objectives to the selection of content? These difficulties are in no sense aimed at discrediting Tyler's approach to the problem of curriculum construction. The type of knowledge that is needed about the proper fit between task demands and the level of the student's cognitive maturity is only now becoming available -- and even that is available is not highly generalizable.

Tyler, like others in the field, have conceived of the curriculum in the broadest of terms. Thus far in this paper I have avoided offering a definition of the term curriculum. The definitions that are generally provided are wide in scope. Tyler himself says that one of the most widely held is: "all the learning which is planned and guided by the school, whether or not it is carried on in classes, on the playground, or in other segments of the pupils' lives."[14]

Such a broad conception presents difficulties. Further, it does not distinguish among levels of curriculum, yet it is clear, as one listens to discourse about curriculum, that such differentiations are made. In my work in this field I have found it useful to differentiate explicityly between species of the genus "curriculum." Each species poses different types of problems, requires different data for dealing with its problems, and usually is the responsibility of different groups of people.

It's one thing to talk about the curriculum for a course in graphics, for example, and quite another to talk about a graphics curriculum. It's till a third thing to talk about the curriculum for an entire school. The first and most specific level may be called the course curriculum; the second, the subject-matter curriculum; and the third, the academic curriculum. What makes it possible to use the term curriculum at each of the three levels is their common characteristic. It is this characteristic that I will describe before proceeding to each of the levels.[15]

The basic unit of the curriculum, which all levels share, is an activity planned by faculty or students and intended to serve as a means to the attainment of some educational end. A curriculum as developed from this unit is a series of activities designed to lead the student toward the attainment of a set of educational objectives.

The reason for selecting the word "activity" as the basis curriculum unit rather than content are two. First, the term activity as used here implies content. To act is to act upon something within some context. Even as vague a phrase as "to study history" implies that someone is going to do something with some content. To study no content would be logically and empirically impossible. Second, specifying the activity as the basic unit of the curriculum calls attention to what it is that the student is to do in the classroom or school. In the final analysis it is what students do in the class that makes the difference. This is not to say that the work of the teacher is unimportant, but to suggest that, by attending to the array of tasks students are asked to engage in, it may be more likely to develop those cognitive processes that are valued so highly.

I would now like to turn to the three levels of curriculum I referred to earlier, to describe them, and to identify the types of questions that must be answered in planning at each level (see Figure 1).

The first and most generic level of curriculum planning is the planning of academic curricula.[16] This level is defined as the entire array of activities which constitute the means by which the institution hopes to fulfill its function. Commonsensically we speak of this curriculum as the subject matters the school offers. In planning at this level decisions have to be made regarding the general ends the school hopes to realize and the means appropriate for achieving them. Most schools in America classify curriculum activities as subject matter to be taught, but this is not the only way an academic curriculum can be constructed. If the academic curriculum is planned along subject-matter lines, one is confronted by the problem of deciding what to teach. Whether or not art is to be taught at all is a question that must be dealt with before planning at the next curriculum level is possible. If art, for example, is to be offered, it is necessary to decide if it will be required for all students or only for some, and to identify the bases on which this decision is to be made. What priority will subjects have in relation to each other? What types of academic programs will be established in the school? If a so-called balanced curriculum is desired, how will balance be determined?

Questions which center around concepts like educational priority and academic balance can be answered only from a prescriptive base. It is possible, I think, to envision circumstances in which art, music, and poetry might justifiably not be a part of the curriculum at all. It is also possible to conceive of situations where reading and writing would have very low curriculum priorities. The curriculum specialists' problem is in part to help to clarify the grounds on which such decisions are to be made, not only by appealing to those who would provide prescriptions but also to those who are in a position to offer evidence regarding the social context, both current and future. As Dewey put it, "It is no reflection on beef steak that it is not fed to infants."

Planning the academic curriculum also includes planning evaluation procedures that will make it possible to assess the effectiveness of the curriculum at large. If, for example, one of the objectives of a school is to develop the student's ability to carry on independent study, procedures could be established to determine how this was being achieved in the various subject matters. Such information could be used to establish profiles on performance on this variable for the subject matters that constitute the academic curriculum. The point here is that planning curricula, like planning any number of other enterprises, requires that some things have first priority. The most generic modes of curriculum planning lay out the "ground rules" within which subsequent planning occurs. The decision to offer this or that, to require this block of activities rather than another, are decisions made at the level of the academic curriculum.

In deciding what the curriculum should be, it is not enough that certain types of learning and subject matters be valued. A community that had a number of agencies teaching art to a large majority of children might appropriately decide that under these circumstances art need not have high priority in the curriculum. I am not suggesting that this is common -- it is all too rare; I am suggesting that valuing a subject matter and considering it appropriate for the curriculum is insufficient grounds for its inclusion in the curriculum. The place a subject matter is to have in the curriculum cannot be professionally determined unless one examines the context, both personal and social, within which that subject matter is to function.

The examination of the social context can be made, in part, by bringing the tools of the sociologist and social psychologist to bear upon the community to be served by the school. Inquiries aimed at identifying the kinds of resources available in the community and the extent to which they are used by various strata of the community could provide curriculum builders with useful information. Examination of students through tests, and interviews with parents on issues relevant to curriculum planning, would also be of use. The procedure of examining the community to gather facts relative to curriculum planning is not to be construed as going to society to decide what is to be taught, but, rather, using data gathered from social sources to make planning more intelligent. The very facts one seeks, as well as their meaning, is guided by a set of prescriptions concerning the curriculum.

The second level of the curriculum is the subject matter curriculum. This level is defined as the entire array of activities planned within a particular discipline or subject matter. Perhaps one of the most significant developments in American education during the past ten-year period has occurred in the improvement of subject matter curricula by groups working with financial support from the National Science Foundation. Groups in biology, chemistry, mathematics, and physics have reconstructed curricula in these domains. Whether or not physics should be a part of the curriculum at, say, the junior high school level is a question the curriculum study groups did not attempt to answer. Once this question is answered, the problem turns to different issues.

The transformation of a subject matter such as is found in works of art, history, philosophy, or science, into a curriculum is a problem of constructing activities that are predicted useful for facilitating valued learning. The problems of identifying organizing elements in a subject matter, of deciding upon a common evaluation program, of specifying sequence among courses in a subject, are encountered at this curriculum level. I cannot help recalling the reprimand I received from the chairman of the art department in the high school in which I taught for allowing high school sophomores to work with silver. "Don't you know they aren't to use silver until they are seniors?" she asked. "Don't you know that I teach senior art and that silver is my specialty?" The poor woman was so shaken by the notion that I had encroached on her territory that she was moved to carry her 250 pounds all the way up to my fourth-floor classroom from hers on the first floor -- a feat which I am given to understand had not been undertaken by her in twenty years.

Curriculum development at the subject matter level also includes questions dealing with modes of inter-subject organization. If it is considered desirable for students to understand how subjects are related to one another, methods to facilitate such understanding must be devised. To answer such questions requires that one reflect upon the costs in terms of time, effort and the possible reduction of teacher autonomy, as well as upon the potential gains. Craft projects, for example, have been used in the elementary school in the guise of integrating art and the social studies which, upon inspection, reveal such activities to be neither art nor social studies. The development of a curriculum designed to relate subject matters over a sequence of courses is a problem encountered most directly at the subject matter level.

The identification of the areas to be emphasized within a subject matter is another problem encountered at this level. Once it is decided that a subject will be taught, it must then be decided what is to be selected within that subject. This question can be answered rationally by first formulating the objectives that are unique to that subject matter, appropriate for the school, and feasible to achieve considering the conditions that prevail in the situation.

To take another example from the field of art education, it has been noted that the art education curriculum at both the elementary and secondary school levels has been oriented primarily toward the development of productive skills. While it is claimed that creativity is being developed, anxieties being reduced, and the child being helped to appreciate art, the primary activity engaged in is the making of products with art materials.

Some research I completed early this year, involving about 2,500 students in high schools and colleges throughout the country indicated that there was very little development of the student's information about art terms, art media, and art history over the eight-year span covered.[17] Discussions with intelligent college graduates about art too often reveal ignorance regarding the ways in which a work of art can be meaningfully approached. The critical and historical aspects of art have not been a significant part of the subject matter curriculum in art. If it is considered desirable for students to understand how to deal with a work of art, and to appreciate something of the culture which produced it, the creation of activities having continuity and sequence in the critical and historical aspects of art, as well as in its productive aspects will have to be developed at the level of the subject matter curriculum. Once these three aspects of the art curriculum are recognized, inquiries can be initiated to help determine which of the three might be emphasized. In some communities it might be important to lay almost exclusive emphasis at the upper-grade levels on the productive aspects; in other communities the critical and historical aspects might need emphasis. In any case, an awareness of the various alternatives within a subject matter makes curriculum planning more an enterprise of deliberation than of custom.

The third level of curriculum planning occurs in constructing curricula for specific courses, and is called the course curriculum. At this level teachers often use syllabi or curriculum guides as a general framework within which they plan a sequence of specific activities. One of the major differences between planning at this curriculum level and the others is that under current modes of school operation this is one of the few areas in which professionals receive feedback. At the other levels committees work together to formulate educational objectives, to identify important generalizations, and to suggest activities for a mythical group of students. Curriculum committees working at state and local levels idealize the curriculum and rely upon their own experience in the classroom, on suggestions from curriculum specialists, and, at times, on descriptive theory. Such groups, however, do not obtain feedback regarding the effectiveness of their planning until the semester or academic year has passed; and, at times, not even then.

Classroom teachers, however, who use the idealized guides that committees draw up, do receive feedback and are in a position to alter the curriculum when they believe it is necessary and permissible to do so. Changes in curriculum range from alterations in pace to changes in content. Predictions made to cover a semester or two for an "abstract: "abstract: group of fifth graders are subject to rather drastic changes in some subject areas by sensitive teachers who work with the reality rather than with the abstraction and who desire to capitalize on emerging interests and educational opportunities. Thus the course curriculum tends to be far more "customized" than curricula planned at other levels.

Curriculum decisions at the level of the course are affected by a host of factors, many of which stem, not from educational considerations, but from givens in the situation. For example, the availability of materials will determine whether or not students will engage in certain curriculum activities. The self-confidence and competencies of the teacher in particular areas may determine whether or not a particular historical period will be investigated. The students' inability to grasp ideas necessary for proceeding to more complex material may preclude the possibility of getting to such material. It is at this course level that the teacher is dominant, and it is here that curriculum planning rests most heavily on her shoulders.

Curriculum planning at the level of the course is also far less rational than one might like to believe. Professional pedagogues, like all men, are creatures of habit. To become professionalized in the teacher's role is, in part, to establish a set of habits that one can use to respond to recurring situations. In the classroom the teacher employs a series of stock responses to cope with the more or less familiar situations that may arise. In the heat of battle, as it were, rationales, scientific findings, and theoretical models pale into the background. Decisions in the classroom, whether on matters of curriculum or of classroom management, are more re-active than active, and teachers find it difficult, if not impossible, to delay responding while conjuring up a model of curriculum decision-making.

But there are other reasons why models, rationales, and theories from the behavioral sciences lose their power in the classroom. Such conceptualizations, because they are aimed at the formulation of principles and generalizations that are generic in character, are in a very real sense disinterested in the special case. The special case, like the exception, proves the rule, and it is the rule rather than the exception in which science is most interested.[18] In addition, the data acquired by the teacher in the course of teaching can be used to make far better predictions for the specific situation she confronts than can a formulation that was constructed for students in general. There may come a day when theories in the behavioral sciences will be so powerful that this will no longer be true, but as yet this day has not arrived.

The fact that Tyler's rationale and other curriculum taxonomies are limited in planning curricula at the course level does not mean that such rationales are so limited at the subject matter and academic curriculum levels.[19] At these levels they do provide a very useful framework for making important curriculum decisions. One can over-estimate the power of Tyler's rationale if one expects it to provide the teacher with a formula for curriculum decision-making at the level of the course; and one can under-estimate its power if one concludes that, because it is limited in the classroom, it is limited at the other curriculum levels as well. One of the major problems in the field of curriculum is to learn what data, concepts, and constructs will be of use in making different kinds of decisions. A taxonomy is useful if it formulates relevant concepts and suggests data-sources to be considered in making such decision.

I would like to conclude this paper by suggesting some means by which curriculum improvement might occur. It seems to me that it would be useful to establish in various parts of the country curriculum research and development centers that would perform a variety of functions. The personnel of these centers would establish relationships with individual schools in their area. They would discuss with faculty and administrators the various objectives formulated for the school at large and for the several subject matter curricula. Center personnel, some of whom would be experts in the field of research methodology and test construction, would obtain or construct instruments appropriate for assessing, not only learning relevant to objectives, but a host of other educational outcomes as well. The negative as well as the positive consequences of schooling would be measured.

The staff of the center, working with the faculty of the schools, would administer these instruments to samples of students, and profiles describing achievement, attitudes, and skills would be drawn for the school and school district at large. These profile would then be interpreted to the faculty by the center staff, and the strengths and weaknesses in the curriculum would be identified. Such assessment would occur not only on a cross sectional basis but on a longitudinal basis as well. And, if it proved feasible, follow-up studies of graduates could be made at one-, three-, and five-year intervals to learn about retention of learning.

A curriculum center would not only be in a position to profile student performance for the school as a whole, but it could also collect data necessary for establishing curriculum priorities for students. For example, if it was found that some students showed great ability in the historical aspects of art but were much less able in the productive areas, the faculty might be in a position to determine whether different types of curriculum activities in art could be provided for such students.

Center staff working with school faculty would not only be in a position to engage in pre- and post-testing but would also be able to plan and test the effectiveness of experimental course curricula. Curricula aimed at the same educational objectives but using different modes of organization could be tested systematically by specialists in research working with the teachers. At present research in education is typically a hit-and-run affair. Classroom teachers seldom have the skills necessary to do meaningful scientific research, and researchers seldom take the time to work through their problems with teachers. Centers for curriculum research and development could narrow the gaps that now exist between research, curriculum development, and teaching.

Centers would not only be able to obtain data on student performance, but, since they would have formal affiliation with a school or school district, would be able to obtain data on factors in the community that are theoretically relevant to the operation of the school. Assessment of parental attitudes toward various subject matters, as well as their disposition toward various types of educational innovation being considered by the school, could be made.

In sum, centers for curriculum research and development would perform three very important functions: first, the provision of the technical skills necessary for evaluating curriculum and school learning generally that are now beyond the competence of teachers; secondly, assistance in the formulation of curricula, primarily at the academic and subject matter levels; thirdly, the carrying out of those studies of the community that are considered useful for curriculum innovation.

Curriculum development in American schools has been most often a piecemeal phenomena. Innovations are usually a consequence of educational crises and, when changes are made, they often occur at the top and proceed downward, working independently of the other curriculum components which affect their own effectiveness. Centers for curriculum research and development located near the schools they serve could function as a mid-way station by providing services and research greatly needed by American schools.

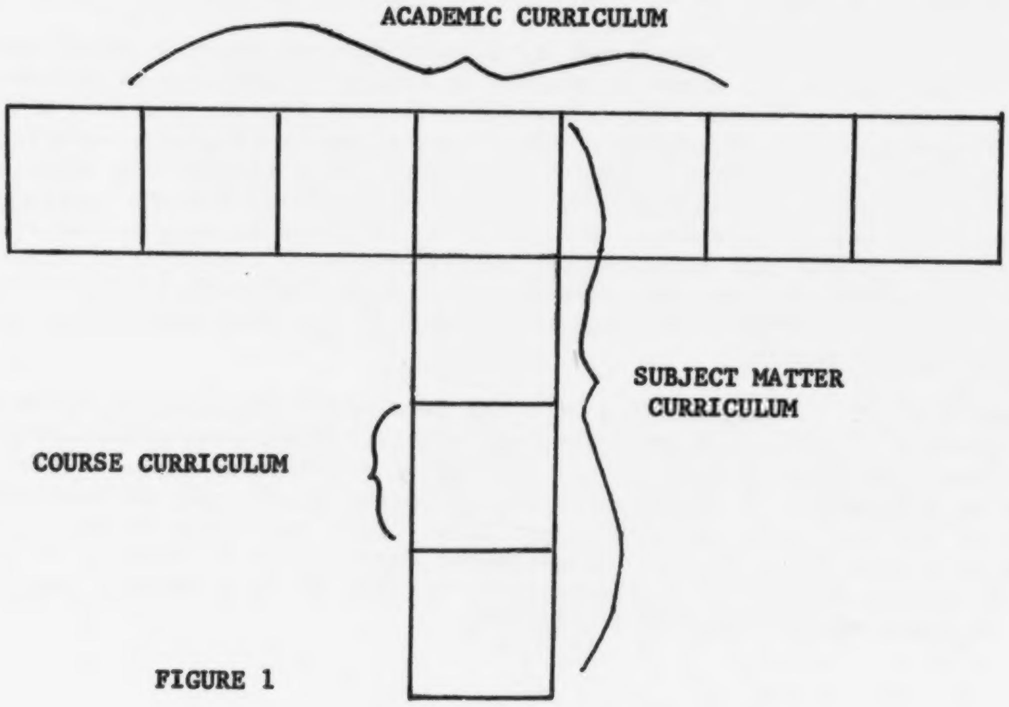

FIGURE 1

LIST OF REFERENCES

1. Phillip W. Jackson, "The Way Teaching Is," a paper presented on teaching, Center for the Study of Instruction, NEA, Washington, D. C., May 1965.

2. I am indebted to my former colleague and friend, Phillip W. Jackson, for calling this sign to my attention.

3. This section of the paper is expanded from my paper, "A Conception of Levels of Curriculum and Curriculum Research" which was presented at the meetings of the American Educational Research Association in Chicago, Illinois, February 1965.

4. Robert Maynard Hutchins, The Conflict in Education in a Democratic Society, New York: Harper, 1953, p. 87.

5. Clifton Fadiman, "The Case for Basic Education," The Case for Basic Education, James D. Korner, ed., Boston: Atlantic Monthly Press Book, 1959, pp. 9-10.

6. See, for example, G. Stanley Hall, Educational Problems, New York: D. Appleton & Co., 1911.

7. See John Dewey, Democracy and Education, New York: Macmillan Co., 1916.

8. Ralph W. Tyler, Basic Principles of Curriculum and Instruction, Chicago: The University of Chicago Press, 1950.

9. Ibid.

10. Taxonomy of Educational Objectives: Handbook I, The Cognitive Domain, Benjamin S. Bloom, ed., et al., New York: Longmans, Green & Co., 1956.

11. Taxonomy of Educational Objectives: Handbook II, The Affective Domain, David R. Krathwohl, Benjamin S. Bloom and Bertram A. Masia, New York: David McKay, Inc., 1964.

12. John I. Goodlad, Planning and Organizing for Teaching, Washington, D. C.: National Education Association, 1963, pp. 95-100.

13. James Macdonald, "Myths About Instruction," Educational Leadership, Vol. 22, No. 7, May 1965, pp. 613-4.

14. Ralph W. Tyler, "The Organization of Learning Experiences," Chapter VI, Toward Improved Curriculum Theory, Virgil E. Herrick and Ralph W. Tyler, eds., No. 71, Chicago: The University of Chicago Press, 1950, p. 59.

15. This section is elaborated from my paper, "A Conception of Levels of Curriculum and Curriculum Research, op. cit.

16. The term "academic" is not meant to denote only "academic subjects" but includes any subject matters offered by the school.

17. My paper, "The Development of Information and Attitudes Toward the Visual Arts," which was given at the meetings of the National Art Education Association in Philadelphia, April 1965, reports some of the findings of this study. A more complete report is in preparation. For a brief report of some of the findings, see my paper "Curriculum Ideas in a Time of Crisis," Art Education, Vol. XVIII, No. 7, October 1965, pp. 7-12.

18. This is to say that scientific inquiry aims at accounting for the exception by placing it under a general rule.

19. For an excellent discussion of the role of theory in teaching, see Jackson, op cit.

EXCERPTS FROM THE DISCUSSION WITH MR. EISNER

Audience: Would you comment on the type of thing books like *Realms of Meaning* and *Democracy and Excellence in Secondary Education* are trying to do?

Mr. Eisner: All of these books are prescriptive theories and are all broadly based. Their conceptions are exceedingly wide, and personally, I am very sympathetic to their point of view as a way of looking at the problem of education, the goals of education and the justification of subject matter. But the plans that Broudy, Burnette, Smith and McClellan outline in their work remain between the covers of books. They are discussed in curriculum courses but I don't think that they have, by and large, been introduced in schools. There are a number of things that are happening. The construction of material, for example, specific kinds of instruction material, such as curriculum syllabi that have been developed by these various curriculum study groups. Educational Services has been concerning itself primarily with intra-disciplinary modes of organization rather than attempting to integrate courses. I think this work is important, but it has not been operation-like in the schools.

Audience: Do you think it would be worthwhile for us to investigate the possibility of developing material within the context of these theories?

Mr. Eisner: If you are going to innovate in curriculum, I think you need to do precisely what Zacharias has done with groups that he has been affiliated with and other such curriculum groups. They not only talk in generic terms about a conception of education, a conception of curriculum, but they have gotten together with subject matter specialists, with teachers, even with some educationists, and they have built syllabi. They have built curricula. They not only built curricula but they got the money to bring in teachers during the summer and trained them to use the curricula that they had built. That is quite a different kind of enterprise than when you write a book like *Realms of Meaning*.

Audience: They created the hardware.

Mr. Eisner: In a very important way, I think the introduction of hardware can make practical differences in the class room.

Audience: Would a course in curriculum be necessary? What is your feeling about how structured course curricula should be?

Mr. Eisner: I think there is a tremendously wide range of possibilities that could be effective in organizing curricula. Teachers as human beings need different degrees of structure in order to operate. Some teachers prefer ambiguity and looseness. To constrict such a teacher into a very narrow range of highly systematized activity may be disfunctional not only for him but for the youngsters. The opposite is also true. I would not want to say that this is the way in which curricula ought to be organized, that this is the only way. There are many ways to skin the cat. My concern has been not to prescribe a way but rather to identify some of the issues that need to be reflected upon in making the decision as to which of the alternatives are going to be entertained. Just let me leave it at that.

Audience: Do you feel that curriculum needs to be related to the teacher or the teaching strategy (method of teaching) and that in research studies we need to take into account that we cannot measure one without measuring the other since one may affect the other?

Mr. Eisner: It will inevitably be related to the way in which the teacher operates. Some optimistic things are happening in teacher education. Some courses are helping beginning teachers to acquire versatility in instructional strategies by providing them with film sequences of their own behavior. Through this they in effect will have a series of techniques or a kind of mastery of a variety of crafts that they can implement in different ways as they deem appropriate. If you conceive of teaching as acting or if you think of teaching as a craft and as an array of techniques that a person has at his disposal, then one of the things you might want to do is to help teachers acquire versatility in the application of the different techniques. If, for example, they are concerned in leading a discussion they know what they need to do in order to facilitate this kind of interaction. If they are concerned with giving a didactic presentation, how do they do this? How does one organize a paper for presentation? If they are concerned with facilitating independent study, what are the kinds of things that ought to be introduced in the classroom so that the youngsters can engage in independent study?

Audience: About your enthusiasm for Zacharias. I think that so long as we continue to buy in at the level that we bought in from the Educational Services Institute we are going to set our public school system back a hundred years. If you know the way in which they function and the fadism in which the plans are taken up your enthusiasm would be somewhat dimmed. 30,000 schools took up a new math curriculum without one single word of evaluation of that curriculum ever being on the record except for one provisional report from limited sample which demonstrated that teachers who have gone to summer institutes in order to learn how to teach the new math had classrooms whose average performance was no higher than that achieved by teachers who had not taken the summer institutes. This is not very encouraging. This doesn't say that it won't work. Secondly, if you know the new math textbook, the seventh grade new math textbook, it is the worse written textbook that has ever been turned out in the United States, barring none. It is absolutely unintelligible to students, parents and the teachers except by special instruction. The hardware had already been created by another organization. You have to temper your enthusiasm for that mode of innovation.

Audience: I think the reason why new curriculum innovations are hard to come to are not surprising in terms of your previous remarks and your orientation. The kind of diagram you put up there, what is that?--A series of boxes? Do you think in terms of standard units which have been thought about for a hundred years in education courses in the school purposes and departments. Your own sensibility and sense for integrated subject matter, for guiding education by questions, by problems and by objectives which hard thinking might determine the reason for them are nowhere incorporated in that diagram. I know no diagram can-be complete, but that diagram prevents thinking instead of permitting thinking. I do not see how when you think in terms of what shall go into a course, you can possibly move with new curriculum developments because you are still thinking in terms of course units. These are not natural units of instructions anymore than semesters are or anymore than classrooms are natural places of teaching. What we are going to do is substitute one material in a course for another set of material in a course and we will have Standard Carnegie Units again, but they will be the same old units. Why did you play in those terms?

Mr. Eisner: I find that a useful way of conceptualizing the kinds of considerations that need to be dealt with in thinking about the organization of materials, the organization, if you will, of content or activities. Schools can and ought to be reorganized drastically. The question of determining sequence, the problem of grouping students, the problems of establishing objectives, the problem of developing continuity, the problem of engaging in evaluation--these will need to be undertaken whether you individualize instruction, whether you ungrade the school, whether you get rid of courses as such. But activities in time and space, plans concerning what's going to come first and what's going to come next, will always need to be dealt with, whether you turn the school topsy turvey or turvey topsy. This is not the final end, by any means. It is just one way in which I can sort out what I think to be an exceedingly complex array of problems in the field of education.

Audience: I think it has been suggested already--that we could do a series of researchers before we dispatch the hardware, before we really get to the point of calling teachers in for training. We must work these things out first. Some other subject areas didn't do this. That was their major problem. That doesn't mean we don't have to do it.

Mr. Eisner: My enthusiasm is not for the particular details of what they omitted. My concern is that it is not enough for professors to write global textbooks about curriculum, and with the wand expect American schools to change. If you are going to change American schools, you have to build materials. You have to build hardware. You have to set up institutes. You have to train teachers. You have to get your hands dirty and roll up your sleeves. One of the unfortunate things is that Realms of Meaning and these other general books remain textbooks for the scholars' shelves. They gather dust on library shelves unless they are brought in in a practical way, and I am using that term advisedly.

Audience: We have been talking about at least six major areas of ideas, but you haven't integrated them very well. Let's compound that with the problem of using principles to arrive at solutions to specific situations, which in itself, is a very tricky job. What often happens is in these six areas--let me rename them very quickly: (1) What do we mean by art? (2) What do we mean by behavior and learning? (3) What do we mean by curriculum content, (4) teaching materials, (5) teaching processes, (6) evaluative procedures or measurement? So far we have talked about these six areas each in its own particular jargon and in its own particular kind of conceptual structure. We haven't equated them. We haven't gotten them into a common language that reaches through them, and even more than that, reaches down to the person who is going to sit down and start to build a piece of curriculum. I have worked with a number of groups that have gotten down to the point of starting to talk about it and starting to build curriculum materials. When you reach that point, all the talk that has been going on before turns out to be a mystique that has little relationship to what you start to do when you start to make materials. One of the major difficulties is that we have not talked our way through to the operational level. I don't think we are going to do that until we have learned how to talk our way through these six areas in a common terminology of some kind and develop a parallelism of ideas. Now I know that if you look at the field of deduction, of the application of principles to the solution of practical problems, this in itself turns out to be a very difficult kind of operation. It is no wonder to me that we have movements like Zacharias'. Because here is a man and a lot of other with him who have tremendous enthusiasm, a zeal to do something they want to do, and without waiting for the sole bridge of supporting principles, they get the steam necessary to do this and off they go. I thoroughly agree with what you said--this is going to hit the school with such a blow that their leaders will prevail and nothing can be done to change it. A lot of the thinking that is going on in a group like this one today will not have that kind of impact for a long time to come. I think one of our major problems is to find out how to work our way down to the operational level without losing these ideas.

Audience: I have worked with Zacharias on three different occasions. I have found that he is probably more guilty than even we as art educators are in rejecting the actual meaning and nature and practice of the arts once you get close to it. He, for example, was instrumental in securing Robert Motherwell and a number of other artists at the N. Y. U. Seminar. When we got these people to talk about what art really meant to them, what they were really trying to do, and what they really saw in the work of children and adolescents, he rejected it outright. The same thing happened here to some extent with Kaprow. The same thing happened at N. Y. U. with George Seigel when he was asked to speak, to give his ideas. I have seen the same thing happen time and again at art meetings with such people as David Smith at the Committee on Art Education, Balcomb Green at an Eastern Arts meeting in Washington, Dore Ashton at the Miami NAEA meeting. Whenever we get people who really know something about the subject to talk about it straight from the heart, with guts, we reject it because it is too hot to handle. I am reminded of Barzun's remark that if we had a real artist among us he would tell us that art is not the good clean fun that is often imagined to be. Until we are really ready to deal with art as art the way that people like Zacharias have been able to deal with science as science, it's just not going to work.

Mr. Eisner: What do we do in the meantime?

Audience: I think we start listening to people who know something about the subject, try to help them work with us more effectively. They are not unwilling to do it.

Audience: I am somewhat puzzled because I am not used to listening to all these sorts of discussions As a foreigner, I can react to their variety. Some of them are concerned totally with the problems of the artist. This is something I have studied; I am fascinated by it, but then I wondered why you were fascinated by it because I asked if you were concerned with teaching artists, which I thought was usually, presumably done in the art school. It is not, of course, but it is what they purport to do. Or were you teaching kids who weren't going to be artists. If you were, why were you so concerned about what the artist thinks because they are not artists. That doesn't mean they don't draw--there is a difference between someone who can draw and someone who is an artist. There is a difference in kind. Some of you have been concerned with how kids learn, and art as a broadening experience, a way of formulating ideas, a way of development. But this has nothing to do, you see, with how an artist thinks necessarily. I am a little puzzled at how these two things got together. I am not quite sure what you want to teach--do you want to teach people who are not going to be artists to be artists, or are you going to teach people who are not going to be artists to respond to artists? If that is what you are going to do, then, of course, you don't ask artists because they think as artists think. Rather you have to look into your own thinking, you ask a critic, you consider the examination of arts, and you don't pretend to psychoanalyze the arts. You psychoanalyze yourself to figure out what you do with it after you get it. I assume you will be two different things in this respect, until you make up your mind which direction you are going to go, you are not going to come up with any useful operation.

Mr. Eisner: I think that I would take issue with you on that. You see, art education is not an 'it'. It is a 'them'., and I think it is going to remain a 'them'. The thing I am trying to get across is as practitioners in the field of art education, there will be many different kinds of things done in the name of art education. There are people who will lean towards helping the youngsters develop the sensibilities to respond to art primarily. There will be people who embrace Herbert Read's point of view. The point I would make is that you do not need unity. You don't need a single-minded orientation that people with different points of view concerning the means and ends art education can talk with one another.

Audience: It is all right if people have different points of view, but they should be talking about the same subject.

Audience: I completely agree with Professor Taylor that you are talking about a lot of different subjects that there is discourse here. There is the art that is practiced by the artist. There is also the idea that art may be useful in making people, children more creative and expansive. There is also art that is a branch of knowledge that Professor Taylor didn't mention because he is in it. All these three can be taught and maybe they are not so separate from one another as one imagines providing there is proper orientation for the subject. In other words, if you really teach art as a branch of knowledge it laps over into the field of the artist because every artist is studying art as a branch of knowledge. I'm not playing along on this mystical idea at all because all the artists I know are very deeply involved in an understanding of the art of the past, an understanding of the art of the present, and making choices about the art of the future upon which they gamble in their work. All of this is part of education, it seems to me. There is nothing that conflicts there with an idea of broadening of psychological and intellectual perspectives. It is necessary to get this subject straight. If people are going to come in and talk about art as Zacharias did, as if it were a question of design, of having a good sense of design, (whatever that means) you'll never get to art. If you are going to talk about art as if it were psychology of visual perception, you will never get to art. But if you start with art, you may get to all those other things. Now that is one of the things we ought to get clarified.

CURRICULUM PROBLEMS IN ART EDUCATION

MANUEL BARKAN
The Ohio State University

I must begin by declaring two special difficulties. One of these, I am sure, would be shared by anyone doing the job I am supposed to do; the other is entirely more personal, but nevertheless present.

Depending upon how one would care to look at it, I have either the enviable or unenviable task of being end man in a series. In the sense of a debate, this might be enviable, because to have the last word could be an advantage. In this situation, however, entirely apart from the fact that the last word is manifestly impossible, the task is such where the sense is one of having to make sense out of the wealth of wisdoms already spoken, and to turn these twoard the task of curriculum development. To put it differently, the task is one of trying to move from several orders of conceptualization to an order of conceptualization for curriculum, which can be sufficiently operational without violating the various orders from which it is derived.

I must, therefore, identify my role as curriculum developer, as I see it, thus to distinguish it from other legitimate inquiry and research concerned in art education and its relevant disciplines. I am fully aware that my role compels me to try to avoid any of the fancy footwork which would do violence to the realities and relevancies of the philosopher, behavioral scientist, critic, artist or historian, whether he sees himself either in or outside the field of art education. Or, if I may put it more frighteningly, I must at least try to understand what all these fellows are talking about, let alone pay attention to them.

I am quite convinced that this is the fate of any curriculum worker, and there is no escape from it. But, to be aware that it is fraught with risk is no refuge.

My personal difficulty involves the fact that I never learned to make a proper logical outline with capitals A, V, C, arabics 1, 2, 3, lower case a, etc. Instead, I scribble on innumerable slips of paper and worry. Eventually, I start. This is how I learned to write, and there is hardly much I can do about it, except to outline when I think I am far on my way, sometimes almost near the end. I know though that there comes a point what that pervasive quality, that controlling concept, takes hold and carries. So I've learned to hope and trust that I will have enough sense to recognize that quality when it begins to emerge. I also trust that the logic doesn't suffer too much in the end. Now, the point of all this personal chit-chat is that this happened again like clock work, while I was preparing my written paper.

I should not forget to add that when I am almost finished writing, I usually throw out the first few pages and redo them. That is when I explain what I intend to say in the paper, after having said it, so that hopefully it will make sense to the reader. This is crazy, but substantially true.

So, when I had worked about three quarters through this paper, I went back to page one and wrote: "I will begin with reasons why curriculum development in art education has been too ambiguous and too halting for current requirements. I will follow with a summary of some reliable and shocking estimates of where art education is in the public schools to underscore the urgency of the curriculum task. Then, I shall indicate major curriculum problems requiring attention. Finally, I will propose an essential course of action which, in my opinion, could lead to significant break-throughs.

I wrote this paragraph after I had worked half way through the major curriculum problems, and by that time I was hooked. There was no place else to go but to follow with some ideas which never would have occurred to me in my right mind--that is, had I started with an outline. There was no way out, but to spin the rest of the web. As a result, this paper is at once a clarification of some curriculum ideas I had written in the past and a repudiation of others. Be that as it may, these ideas make sense to me now, and hopefully they might to you.

Before I move into the substance of what I want to talk about, I must delimit the ground as I see it. There are two inescapable givens; and I make three specific assumptions.

The first given pertains to the inherent nature of curriculum. Curriculum is the meeting ground on which the educational institution and the student come together; indeed, curriculum is the arena where on one hand, the institution offers selected and contrived activities which it judges and predicts will have educational value, and where on the other hand, the student encounters selected activities, derives whatever experiences he does from them, and achieves whatever values which might accrue. The values may or may not fulfill the predictions of the institution.

To the extent that curriculum problems are vaguely defined, knowledges and beliefs upon which to base decisions are used indiscriminately. The consequences are vague judgments, ambiguous predictions, and a la mode decisions. Just as often, there are glorified and unverifiable hopes. But perhaps more importantly, the clearer the identification of problems, the better the grasp of relevant knowledge, of inadequacies and gaps in knowledge, and of limitations in decisions.

The second given is the inherent nature of knowledge and beliefs upon which curriculum decisions are based. These knowledges and beliefs are of different orders; hence they must function in different ways. They are also eternally incomplete, forever in formation, yet they must be taken as immediately functional. In other words, curriculum is here to stay, and the best we can do is to use knowledges in the best ways we can today, subject to revision as new knowledge makes us wiser.

Now to my three assumptions:

(1) My concern with curriculum pertains to the general education in and about art for all American youth in an open democratic society as already developed by Melvin Tumin. My focus, therefore, is on the elementary and secondary schools. I do not exclude the dimension of general education at the college level, though I do exclude professional education simply because there are further aspects to the latter which are different and particular.

(2) I distinguish between research and curriculum development, not that curriculum development does not involve research, but rather that the research it does involve is of a special order. Curriculum research does not involve the quest for basic knowledge as does philosophical or behavioral research. Rather, curriculum research is more on the order of translation of basic knowledges and their development into various dimensions of instructional program.

(3) I distinguish between curriculum and teaching, completely mindful of the fact that these are often indistinguishable in the live life of the classroom. But, I must make this analytical distinction because there are important aspects of teaching method that really do not bear upon questions

> pertaining to what should or should not be included or excluded from curriculum. For example, Melvin Tumin's plea for the elimination of grades and grade levels has more to do with method than curriculum content. His plea remains valid whether we would redevelop curriculum or not.

Having set some of my limits, let me describe what got me started, or in Alan Kaprow's terms, what gave me the itch. I read the reports of the NEA's study on art and music in the schools and the study on art instruction in secondary schools by Reid Hastie and David Templeton. I also read a preliminary report of Elliot Eisner's study of what students know about art and what their attitudes are.

The NEA study shows: "The regular classroom teacher was expected to teach art without help from a specialist in over half the elementary schools reporting." Ironically, the data also indicates that over sixty percent of the schools did not require teachers to have ability to teach art as a condition for employment. Only about one-quarter provided specialist help, and art was taught by specialists in less than ten percent. Only 38.5% used a curriculum guide, and over two-thirds of these were locally developed.

Of all the instances where art is taught either acceptably, or even elegantly, the national picture is indeed depressing. How can art be taught meaningfully, when over sixty percent of the schools do not require any ability to teach art, when half the teaching is done by classroom teachers without specialist advice, when teachers in 61.5% of the schools do not receive any curriculum guidance, and when 88.1% use either locally adopted guides or no guides at all? Art has many faces, but who can argue that art instruction ought to be either so uninformed or so varied?

I am not suggesting a national course of study. Heaven forbid! But, who can contend that art instruction in two reasonably similar depressed neighborhood schools--one in Columbus, Ohio, and the other in Cincinnati--should be differently oriented or guided? Wouldn't it make more sense to recognize the crying need for differentiated guides according to the special needs of neighborhood schools, rather than to proliferate the rash of local general guides, thus to miss the mark in almost all neighborhood schools?

The NEA study reports that guides are used in fifty-seven percent of the secondary schools. Over forty percent of these are local. Less than forty percent were revised between 1957 and 1962. The Hastie-Templeton study shows that: "only one school district out of ten. . .indicated any major innovation." ". . .the most important goal was. . .general education which provides art experiences for all high school youth." The next important goal was "pre-professional preparation as a foundation for a career in art."

According to a preliminary report by Elliot Eisner, his population consisted of about 1,000 students representing schols in the west, mid-west, and east, from the ninth grade to the senior year in college. Forty-one percent of the secondary school students had studies art for at least two years; the rest had studied art for one year. All the college students were prospective elementary school classroom teachers enrolled in art education courses.

Eisner reports: sixty three percent did not know the meaning of the word "hue;" seventy percent did not know what the word "value" means; fifty-two percent did not know that "opaque" colors are not transparent; and over seventy-five percent did not know what the word "medium" referred to. More than fifty percent thought Rembrandt was either Italian or French. Among the college seniors--these people would be judged competent to teach art in elementary schools with such a requirement--these students identified the period when Picasso and Matisse worked as follows: fifteen percent thought the eighteenth century; ten percent indicated the seventeenth; and seven percent relegated Picasso and Matisse to the late Gothic period.

Eisner's findings on attitudes show more than twenty percent agreeing that "artists should paint pictures that the majority of people can understand." Thirty-five percent were either uncertain or disagreed that "Advances in the field of art are important for a country's progress." Two-thirds agreed that "Good art is a matter of personal taste." If Elliot Eisner will allow me to borrow his terse phrase: "Damn the experts--full speed ahead."

Where is art education heading? What is being taught under the banner of art in many college courses for elementary school classroom teachers? Can the field of art education any longer tolerate the lethargy of bit-by-bit and halting curriculum revision, restricted to the capabilities of individual schools and single school systems? Can we afford the comfort of the orthodoxies about art instruction which we helped to create?

Without doubt, there is a better fund of knowledge about art and its teaching than is revealed in most school practices. Furthermore, it is entirely unfair to place the onus on the individual teacher, already far too overburdened with too much work, and just as much overloaded with vague and contradictory generalizations. There is a massive task for curriculum development, and there appear to be ready resources to support it. Truly, it is time to fish or cut bait.

In order to proceed to the curriculum problems, I must declare certain further assumptions:

That the nature of art is complex is axiomatic, and hardly bears repetition by me. That art is an open system--unpredictable and unforeseeable--is being hammered home with regularity by artists. The presence of alternative aesthetic theories, and the absence of a viable unified theory, has baffled and amused artists, has plagued aestheticians, art critics, and art educators. In a sense, the artist needs no theories. He makes his works, and the aesthetician's task is to see whether his theories properly account for the qualities in the works. The efforts of the critic hinge on applying appropriate criteria to works of art. The art historian, even the one who restricts his task to description, is following a particular view of empiricism. The art educator cannot avoid theory, because he must be guided by it; hence, he must synthesize the knowledge in art of the artist, and the knowledges about art of the aesthetician, the critic, and the historian.

To the detriment of art education, however, we have anchored curriculum almost entirely in relation to the artist, only slightly in relation to the art historian; we have ignored the aesthetician and critic. Art curriculum is faltering, not because of efforts to attend to art history, but rather, because we have not learned to use the aesthetician and critic, nor do we properly use the art historian.

The artist can afford to be skeptical of theory, but not the teacher; and whatever skepticism he derives from the artist, operates to the deteriment of his teaching. According to Stephen Pepper: "Utter skepticism, . . ., turns out to be a species of dogmatism. When a man declares, . . ., 'nothing is known at all,' he does not seem to be committing himself to any cognitive responsibility. He seems to be playing safe and relieving himself of all demands for evidence. Actually, he is just as responsible as if he declared, 'I know all things and their nature is such and such.' He must produce evidence for his sweeping denial of the trustworthiness of evidence; otherwise, there is no reason to accept his declaration."

Art curriculum will falter until we rid ourselves of skepticism, and accept responsibility for rationality. If and until an adequate aesthetic theory is presented, curriculum must solve the difficult problems of dealing with the "postrational eclecticism" that Stephen Pepper talks about, or the role of aesthetic theory which Morris Weitz proposes: "as summaries of seriously made recommendations to attend in certain ways to certain features of art."

To turn now to curriculum problems--there are isolated curriculum constructs extant in art education theory, but I know of no theoretical structure for curriculum content which simultaneously answers to current criticism of available constructs and current field practices, and enables consistent treatment of curriculum problems.

However, before I even try to unravel some of the issues, I must digress to identify some difficulties in the concept of structure itself, not that I would even attempt to deal with these as the philosopher would, but rather that I cannot avoid confronting them in order to proceed.

The concept of structure in the context of the structure of a discipline and its meaning for education, as brought into prominence by Jerome Bruner, has stimulated many in art education, including myself, to try to make sense out of art curriculum problems. Though Bruner is concerned with all of education including the humanities, the context of his explicit talk about the structure of a discipline is in terms of the physical sciences. He says, for example: "A sense of tragedy and triumph achieved through the study of history and literature is surely as important to modern man as a sense of the structure of matter achieved through the study of physics." Thus, physics teaches the "structure of matter," and literature and history, teach "tragedy and triumph." But do tragedy and triumph--that is, the disciplines of literature and history--have a structure comparable to the one of matter--that is, the discipline of physics? Bruner doesn't claim they do. He simply treats them analogically, without noting any difference, and without making a fundamental distinction.

Physics--that is, science--has a formal structure of interrelated theorems, rules, and principles so that conceived hypotheses can be put to test rather than judgment through evaluation of relevant data. Hence, there are science disciplines, and scientific inquiry is disciplined. But, does the absence of a formal structure of interrelated theorems, couched in a universal symbol system as in science, mean that branch of the humanities called the arts are not disciplines, and that artistic inquiries are not disciplined? I think the answer is that the disciplines of art are of a different order. Though they are analogical and metaphorical, and they do not grow out of or contribute to a formal structure of knowledge, artistic inquiry is not loose. For examples, according to Ecker, the artist seeks order; he is guided and indeed controlled by the pervasive quality which emerges as he works; and according to Stephen Pepper: "A thoroughly competent critic is one who has both intimate experience with the art he is judging and possession of reliable criteria of criticism." Clearly then, there are controls operating in competent work by artists, critics and others engaged in art; and to this important extent, they engage in structured inquiry which is disciplined. Hence, though there is no formal structure in the arts, they are a certain class of disciplines. To this extent, too, inquiry into art curriculum can be both structured and disciplined, and so can the curriculum itself.

In the sense which I am now using the concept of structure, the absence of an adequate theoretical structure for curriculum content presents a problem of the first magnitude, because without one, there are no controls. Clearly, until this problem is resolved, attention to other curriculum problems will remain disjointed at best. As presumptuous as it may appear, I propose to try to find a way to break out of this dilemma. To do so, I will begin by sorting problems into the following four operational categories: (1) What to teach and toward what ends; (2) What to teach, to whom, and in what order; (3) What to teach with; and (4) How to evaluate outcomes of teaching. I shall use the first of these categories as the means to develop a theoretical structure for consideration. That structure will then serve my purpose for treating the other three categories. I must point out that the structure is schematic. By this I mean that it must be open to mediation according to data about specific students without distortion of its basic pattern.

In the category "what to teach and toward what ends," I include problems of goals, content structure, activities, and objectives. I am differentiating between educational goals and objectives for activities. Otherwise, I do no know how to pay attention to Elliot Eisner's admonition to stamp out non-behavioral objectives. To goals, I assign the function of determining content structure and the nature of activities.

Objectives require consistency with goals to serve both the design of specific activities and evaluation of instruction.

Any excursion into historical transformations of curriculum goals would show that the frequent absence of the tradition of art from art education has led to the bifurcation between practices in the field of art in the culture and art instruction. Here is where I think is embodied the current problem of goals.

That this problem is a major focus in recent art education literature is apparent. Edmund Feldman's attention would be significant, if for no other reason that the title he gave to his paper, "Works of Art as Humanistic Inquiries." That Feldman points to humanistic inquiry as the source of goals is, I think, a landmark.

Feldman focueses on philosophical meaning in art, and suggests that the quest for meaning should be the goal of curriculum as it is for art. He asserts ". . .students should be taught to ask the kind of questions artists ask. . . , and. . .great artists ask questions. . .about ultimate meaning. . . . It would appear that art education can be a humanistic discipline to the extent that it teaches students to ask significant questions."

According to Feldman, the primary goal of art education should be to confront students with unending questions about human meanings in their own life-centered problems. If such a quest were pursued, art instruction would lead to an education in humanistic inquiry. He asks: "Do we fashion our teaching material around such important and exciting questions as the life of man in cities, in neighborhoods, in domestic dwellings, and in public buildings?. . .Does the world of industrial design, product design, package design, enter into art instruction in any systematic way?"

It seems to me that such problems have force for engagement with important segments of reality. They escape attention in most art instruction, and even when they are treated, the humanistic perspective Feldman requires is not taken. But, important as such problems are for curriculum content, in themselves, they fail to embody an adequate goal direction for art instruction. Therefore, I put them aside until later.

For conceptual assistance, I turn to Arthur Foshay's paper, "Discipline-Centered Curriculum," where he proposes a resolution to the goal direction problem of education.

Foshay distinguishes between what he calls the subject- and problem-centered approaches to education. In the subject-centered, subjects as taught are unlike the same subjects as known by scholars--that is, spelling and grammar instead of essay writing; arithmetic in place of mathematics. In the problem-centered approach, say the teaching of essay writing, the student is asked to perform the task as the professional does; the problems are real and the professional is the model.

By way of Jerome Bruner's emphasis on the disciplines, Foshay continues: "It seems to me worth emphasizing. . ., that the sophisticated knowledge that we have--the knowledge that separates the educated from the uneducated--comes to us in these disciplines. These are in the forms in which human knowledge is handed to us. . .
". . .The assumption, . . . , is that by learning the structures of the major disciplines through which man's knowledge is made, a student may himself become an active learner. . ."

Foshay concludes: "At the bottom of the principal disciplines lie generalizations about man and his environment which we use. . ., in coping with the problems we face day to day. We need in school practice both an understanding of how these generalizations are created, so that we may be freed from a slavish dependence on the loudest proclaimer of his particular version of the truth, and at the same time, we need practice in bringing these generalizations to bear on the practical problems that confront us. . . .The difficulty with the old subject-centered school was that the subjects were not conceived as having intellectual merit. . . .The difficulty with a problem-centered approach. . .is that the problems as they come are not disciplined, nor do they ordinarily lead us to an understanding of the disciplines through which human truth is developed or discovered. . . .We have to do it both ways--both problem-centered and discipline centered,. . .--if we are to produce students, who at the same time that they think, are fully aware of the intellectual processes that they themselves are using."

Here, I submit, is a viable resolution to the curriculum goal problem in art education. We need it both ways too! We need the problem-centered approach for students to learn to think in terms of qualitative dimensions that bear on life-centered problemsn, as Feldman proposed, but with two additional provisions: First, recognition is essential that aesthetic problems in contemporary life, as in all time, include man's relationship to man, and man's relationship to himself in his solitude. And second, inquiry into such problems should not only be guided by questions of human meaning as Feldman proposed, but they also should be guided by a quest for understanding: (1) the means and methods used in the inquiry, and (2) the diversity of analogous confrontations with such problems that the history of art teaches us, including attention to similar and contrasting works. In short, problem-centered inquiries, humanistically conceived should include considerations of critical and historical dimensions, because only then would there be promise for understanding the possibilities and limitations of generalizations about art and the intellectual processes involved. Furthermore, only then would there be promise of realizing the scope of artistic truths given to us. In this sense, curriculum would also become discipline-centered. In terms of the theoretical structure task, the qualities of problem- and discipline-centeredness would become the first level of curriculum control. (See chart, page

In order for curriculum to become both problem- and discipline-centered, in the terms already discussed, then the second level of operating control would stem from the modes of inquiry exemplified in fields of art. Implied is a content component membership which includes studio production, criticism, and history. The professional scholars in art--the artists, the critics, the historians--would be the models for inquiry, because the kind of human meaning questions they ask about art and life, and their particular ways of conceiving and acting on these questions are the kinds of questions and ways of acting that art instruction would be seeking to teach students to ask and act upon. The artist and critic would serve as models for questions that could be asked about contemporary life. The historian would serve as model for questions that might be asked about art and life in other times, other societies, and other cultures in order to illuminate the meaning of the past for better understanding of current pressing problems.

On the problem of structural relationships among the three curriculum content components--production, criticism, history--I know of no source for guidance as to how they may best be organized, save what is done in college studies, where the criticism member rarely stands alone and is most often incorporated into both the production and history members. Hence, the structural relationships of the content components would be: criticism-production and criticism-history. These would serve as the third level of curriculum control. Experience gained with this structure can be improved and refined through ensuing experimentation in public school situations. I would point out that criticism as philosophic conscience, which is my "short hand" way of describing Harold Rosenberg's message to me, such criticism would function as integrating force among the components.

There are two kinds of sub-problems--problems of weighting emphases on the content components, and problems of time deviation and sequence of these components. Both these will require behavioral science knowledges to resolve.

John Goodlad's conception of "organizing centers" provides the means to operationalize inquiry into life problems within the structure of the content components. Thus, the life problems proposed by Feldman and such others as ideas and feelings, the human figure, nature forms, etc. would be perceived as organizing centers. When a selected life problem, made to act like an organizing center, would be filtered through the curriculum content structure--criticism-production and criticism-history--then activities thus distilled would become focal points for student engagements in humanistic inquiry in the manners of the artist, the critic, the historian. The concept of life problem as organizing center would then serve as the fourth level of curriculum control; activities and their objectives would be the fifth level.

Implied in this conception of curriculum structure is the need to reconceive the meaning of the word "activity" in the nomenclature of art education. The idea of activity as inquiry-moving activity would no longer be restricted to studio production activities as the primary moving activities for inquiry in and about art. Rather, activities associated with critical and historical analysis would become duly recognized and consciously utilized for their moving powers. There would then be an array of different kinds of inquiry-moving activities; such as: painting, constructing, sculpturing, etc.; examining, comparing, reading, describing, judging, evaluating and writing.

The problem of detailing difficulties and possibilities for specific objectives remains. On this problem, Elliot Eisner left me between the devil and the deep blue sea when, in his introductory paper, he admonished us to "stamp out non-behavioral" objectives on one hand, while on the other he pointed to the dynamic flux in the classroom, where wise, predetermined objectives would be nigh impossible. I am certain that the latter is not entirely what he meant, though the difficulties he identified are well taken.

Let me compound the difficulties so that the full magnitude of the problem is seen, before I propose a way toward resolution. If I were to solve the problem theoretically, I would say that a concrete instructional objective identifies a level of performance of a given task. In this case, the performance level is the student's in art activity (any of those identified); the task is as it may be practiced by the artist, the critic, the historian (they are the models). Here is the difficulty, because available theory, hence available techniques for assessment, do not serve the problem at the behavioral level. (I must add that Melvin Tumin's assurance that measurement of affective behavior is within reach is indeed helpful). At the moment, however, there is more to go on pertaining to levels of student performance; there is pathetically little pertaining to task performance by professionals.

Nevertheless, and in face of difficulties Eisner and I have identified, it seems to me that better ways can be found than are revealed in present practice. Even at the most general level of task performance by professionals, we know that it involves high perceptual and conceptual acuity. As to students, there are some useful theoretical constructs about development, perceptual and conceptual. Crude as all this is, I think we can begin to put some things together to clarify behavioral objectives.

I am not a test constructor, but let me illustrate--second graders begin to qualify their "talk" in terms of "sort of yellow" when they mean brownish yellow, because the world yellow alone doesn't fit their perception. What is more, the second graders whom I have heard conceptualize in terms of "sort of yellow" or "kind of greenish" were often the ones who painted--that is, they conceptualized with paint--a sort of yellow and a kind of green. My point is that these behaviors are relevant to the task performance models of the professionals. Therefore, would two such behavioral objectives for the lower elementary school be unreasonable: (1) verbal evidence of color discrimination to the degree of the standard name of a color, qualified at the level of "kind of" or "sort of"; and (2) non-verbal evidence of color discrimination to the degree of minimum modification of color as it comes from the can, intentionally rather than accidentally? On the basis of even such minimal objectives, some operating controls would be available to the teacher to contrive activities of, let us say, examining, comparing, describing, and painting aesthetic phenomena in the life problems under study through attention to works of art and factors in life; and these same controls would serve for evaluation.

In such talk about objectives, I am aware of the risks. I am not implying any ready-given sequence which would emasculate the nature of the art content. Rather, I am thinking in terms the exercise of modalities within the context of works of art, professionally made and in process of making by students. I am simply saying that we know enough about both child development and art to be able to begin to conceive minimal working objectives without violating either. Let me also suggest that, when we get to this task with imagination, we will have travelled far on the road to discover the clue to articulation of instruction in the subject matter of art throughout the schooling years, so that most art teachers, regardless of the grade level of their teaching, will then no longer find it necessary to say: "I have to loosen them up first," or "I have to get them to forget what they know," or "I have to start from the beginning." So many art teachers always find it necessary to start from scratch. If any of this makes sense, then surely we can think of analogues throughout the schooling levels.

The theoretical structure for curriculum content which I have just outlined in terms of the five levels of control, is what I offer for consideration. That it was philosophically derived, not empirically, is obvious. I must, therefore, provide my reasons.

I assume two things: first, that a human being must find a way toward self-realization; and second, that it is the job of education in a free society to teach people how to achieve self-realization through engagement in the intellectual life as seen in practices of theoretical and qualitative intelligences explained by Dewey, Champlin, Villemain and Ecker. In such a life, at the ultimate level, the only controls are the free and open debate of ideas with the guarantee of safety to all involved. To put this in terms already discussed, the quest for self-realization is embodied in the confrontation of life problems; engagement in the intellectual life is through the disciplines.

Except in the sense of what to teach toward what ends, philosophy cannot teach us necessary truths about how to teach. Hence, philosophy alone cannot help resolve problems of what to teach to whom, what to teach with, and evaluation. For those purposes, we must turn also to the behavioral sciences to learn the conditions under which educational content can be mediated. The behavioral sciences teach us about how men are capable of behaving because of their needs and abilities, and the terms in which they are able to seek realization; they also teach how men arrive at fulfillment or frustration. But, what may be perceived as fulfillment in one society can turn out to be frustration in another, and if philosophy has not yet communicated that truth clearly enough, then history certainly has. To be guided by undifferentiated needs and abilities can lead to catastrophe--witness the Hitlerian holocaust. Thus, for behavioral truths to serve the needs of education in a free society, they must be filtered through philosophical truths. Then they can serve as powerful tools to unlock the sequence problem and others as well.

There is no given source for sequence in the disciplines of art. All one need do is read what artists have said and talk to some of them. My reason for these assertions lies in the distinction I made earlier about the concept structure. And, what I have just said about the artist, as touchstone to the problem of sequence, I would also say about the critic and historian.

Consequently, sequence for learning in art must be arbitrary, not in the sense that it is capricious or unreasoned. Rather, it is because sequence can properly be derived from two other kinds of sources. Thus, the sequence problem is to be resolved through reasoned arbitrariness.

I will call the two sources for sequence the informal and formal. Both are equally important, and both need to be played together. What the individual teachers know intimately can serve as a lucrative source for sequence. What is equally obvious is that the individualities of teachers cause this to be an informal source.

Among the formal sources I include theory about child development, social-cultural conditions, and learning. On the basis of my distinction between the functions of philosophical and behavioral truths, and even considering the uncertainties of behavioral science truths, there is a potential goldmine not yet even tapped. In my discussion of objectives earlier, I implied the point by suggesting that we look to theory in child development and learning.

Similarly, I would point to three art education researches with potential power to spare. June McFee's work in the social-cultural dimensions of learning in art, Vincent Lanier's work in communications theory, and work by Kenneth Beittel and his associates in creativity and in strategies of teaching and learning in art--all these researches can open the way to resolve the sequence problem for different ages, different kinds of people in different places, physical and cultural. But, to repeat, the philosophical meanings--however our intelligence will lead us to understand them--must remain protected and unimpaired. On this basis, we are free to speculate, to conceive, and to test specific sequences, without risk of violating the nature of the subject matter of art. On this basis too we can honor cultural differences in order to exploit them toward education for the intellectual life in the arts, as I have been talking about it. Let me illustrate in what may appear to be a brutal manner.

Vincent Lanier has been digging in communications theory and is now working with the value neutral concept of canalization. I call it value neutral because it is a frightening tool, depending on one's philosophical position. Herr Goebbels was on to it intuitively thirty-five years ago, and Madison Avenue uses it now with knowledge and control. It involves important considerations for cueing in on another person's wave length, so to speak: first, in order to learn what he values so that you can act as if his values are yours; then, to analyze his values and your own to discover even the most tangential link; and finally unbeknown to him, to consciously utilize this link to lead him away from his values toward yours. Here, indeed is a classic in sequence strategy. Lanier's interest is to discover wherein the strategy can be applied to teach art appreciation to the inhabitants of "Beatlemania." Just think of the implications for sequence in teaching humanistic inquiry to children in depressed neighborhood schools, to children in ethnic sub-groups, etc.

I have no illusion that the thesis I am here developing will meet with overwhelming approbation in the field, though naturally I hope I am wrong. I am certain, however, that even those who would agree will wonder how the herculean task I am proposing can be effected. After all, this task will require not only a reeducation of teachers in the schools; it requires that we reeducate ourselves. Impossible as this may appear, and I have no illusions about the magnitude of the difficulties, there is a key at hand--tried and proven.

Jerome Bruner identified the key by entitling the final chapter of his Process of Education, "Aids to Teaching." (25) I prefer to call them curriculum materials, because what is needed are both aids to teachers and to learners. The power of materials, imaginatively and well conceived, has already been demonstrated by the science, mathematics, and language groups, even considering what errors, failures, and difficulties encountered along the way. The impossible could be made possible, and the mountain would be moved to Mohammed. The focal point of attack is through curriculum materials.

To move the mountain, however, there would be the truly monumental task of thinking through, searching out, selecting, organizing, developing, and testing materials which could engage students in the kinds of humanistic inquiry I have sketched; and there would be the parallel task of preparing curriculum guides for teachers. There are three dimensions to this whole problem which I want to develop. First, there are general considerations pertaining to teacher's guides and student materials. Then there is the necessary framework for the triple pronged task of preparing student materials for engagement in productive, critical and historical inquiry. And last, there is the special problem of art instruction in the elementary schools. The latter, I think requires special, if not entirely unorthodox attention.

Clearly, no school system in the country has the resources to develop the array of materials to meet the task I have set forth. Nor should any school system have it. Even to begin to resolve this problem would require highly competent and knowledgeable specialists, joined by administrators and teachers in the schools, and working as a task force over a period of at least a decade. Let me call this a practical issue and set it aside to return to it in my concluding section.

There is still another kind of issue involved which, unless realized would lead to a misunderstanding of the educational problem in America. We need no national guides, but the kind of general local guides in use are obsolete. Each of our large cities is a macrocosm, sharing virtually the identical problems with other cities, save for some important but comparatively lesser regional differences. In education, as in almost all other major dimensions of American life, localism as such is a legacy and a millstone of the past. But there are special problems, and the truly do need special attention.

Robert Havighurst in his report on The Public Schools of Chicago (26) provides a sociometric classification of four types of schools which reflect fundamental economic, cultural, and academic differences, all in one city, with implications for educating students in these schools. Would New York City, Los Angeles, or even Dallas, Texas, come up with a different classification if the same criteria were applied? Probably not. A city like Columbus, Ohio, would have at least three of the same sociometric types as Chicago, but small cities and rural communities might add about three additional types, with the probability that there are about seven really different types of schools or school neighborhoods in the country. These are the type differences that need to be served through specially designed curriculum materials. If these materials were developed in regional centers, then the necessary expert talent could be focused on the task, and regional differences would be honored and reflected.

The important dimensions of the student materials problem are: conceptual controls for the selection of art media and reproduction of works of art, development of a wide variety of specific and purposeful collections of reproductions, and the selection and development of literary materials.

For the sake of brevity, I won't go into detail about controls for selection of art media save to comment that there is more than we know what to do with. Conceptual problems lie in a study already undertaken by Mattil and Beittel on "breadth and depth;" they also lie in relative resiliency and resistancy in specific media as these may bear upon engagement in production and learning.

Major attention needs to be given to bringing works of art and literary materials by artists, critics, and historians into the classroom.

Let me say at the outset, that I would hate to become involved in a debate as to the relative merits of original works and fine reproductions. Joshua Taylor has already made some comments on that. From my point of view, I am concerned with quality art instruction for all American children from our cultural centers to the tiniest hamlets. And in this regard, I am not so much impressed by the fact that the reproductive rate of children is far outstripping the productive rate of great works of art. And let me hasten to add, there is no intended slur on the productivity of our fine contemporary artists. Rather, the intellectual life in art requires access to the greats of other times and places and the supply of El Grecos, Cezannes, etc., is just too short to do the job. Hence, in interests of quality education, I'm afraid we will have to settle for high quality reproductions.

What seems to me of greater importance than the original or reproduction issue is the fact that present collections, in schools, of good reproductions in print and slide form are largely so limited or almost non-existant that they are even inadequate to support the present level of art curriculum let alone the one proposed. To develop the necessary collections requires reference to the organizing centers concept and attention to life problems. To explain what I mean, I will simply refer to Joshua Taylor's talk about the Chippendale chair and other chairs. I would also refer back to Jerry Hausman's talk about horses and sun. It seems to me that both were talking about works of art as expressions of philosophic meanings. It is what Lewis Mumford talks about when he suggests that nudes by Cranach, Rubens and Manet convey three philosophies of life, not just three women. Just add such artists as Botticelli, Velasquez, Prudhon, Matisse, Modigliani, and Picasso to fill in some of the gaps and to encompass more diversity. A collection, limited to only a dozen, could open the meanings in the comparative philosophies of life for any student engaged in such a purpose. Or, if an organizing center such as the female body would disturb the sensibilities of a fundamentalist community in any region of the country, we could take men's faces and include such painters as Van Eyck, Raphael, Gericault, El Greco, Van Gogh, Hals, and Kokoschka. One could go on and on to encompass the problems proposed by Feldman and to build on the idea that Lanier is working on.

We would need such materials in profusion, designed and packages not only for use with students at different schooling levels, but also to suit conditions and requirements in different types of communities (rural or urban), different types of school neighborhoods (depressed city centers or the affluent suburban ring), and different kinds of cities (the metropolitan centers with their rich cultural cultural resources, or the homely, drab, and constricted cities which dot the American landscape all over the country).

Literary materials for critical and historical inquiry are almost totally absent from the schools--materials in the form of essays by critics and excerpts from artists' notebooks; such materials as short versions of excellent art history survey texts like Janson's (29) and Robb and Garrison's (30). With the help of language usage experts, a great deal of fruitful material could be rewritten to the upper elementary school reading level, and special reading materials could be conceived for the earlier grades.

Before leaving the problem of curriculum materials, I have one further proposal--that we learn to exploit the technology to the hilt toward the proper goals of education in art. For example, is there any reason why we could not create an analogue to the language laboratory? This would be an art study laboratory, and it could be used to carry on substantial portions of the criticism-historical component of art instruction. Let me describe what I have in mind.

There would be a bank of booths where students can go to study individually; and these booths would be equipped with dual projection screens and a synchronized tape recorded with earphones for listening. The student would control the mechanism to start, or to back it up in order to be able to repeat. On the projection screens could be shown comparisons out of a small collection of art works of the kind I described and gave as example. And, the voice of a connoisseur could be brought into the classroom, thus to take students on the adventure of learning how to "read" works of art, to enjoy, understand and to inquire through them. Literary materials of the kinds I sketched would be selected and ready for students to engage in reading assignments.

Imagine the possibilities if only a few men like Joshua Taylor and Harold Rosenberg would be willing to consult in the selection of the works and the preparation of the scripts for the tapes. Imagine the impact if a school had only a dozen such programs. And imagine further the leverage that such an instrument would have on teachers.

Some will surely say that this is a teaching machine, and so it is of a sort. But notice its characteristics. It is student controlled. It is not a whole course, but rather a segment. Hence the teacher can control the order and frequency of the segments. It is individual; it is not the mechanical horrible mass T.V. lecture course being perpetrated as education in most of our own universities. It is not even comparable to the T.V. in widespread use in school classrooms, where the tempo is foreign, and where the child who loses his place, so to speak, is lost. What it can be, is to bring expertness into art instruction for the benefit of students and teachers. It is double controlled: toward valid ends and by educationally valid means.

But the doubter might still say: "You cannot discuss. The student cannot ask questions." The answer is simple. Neither can you ask a question of a good book. The question asking and discussion are tasks for the teacher and students before and after the students have read--that is, before and after they have looked and listened.

And to make the machine do what we are convinced is true about the nature of art, we could arrange with two knowledgable men, who understand each other and yet disagree with each other, to address themselves independently to an agreed upon group of paintings. Imagine then some of the problems students would be called upon to resolve inteligently with their teacher. Is it too much of an illusion to think that some mechanism such as this could bring the iltellectual life of humanistic inquiry into the classroom?

To be sure that I am understood--I am convinced that the machine can be made useful if properly controlled toward valid ends and by valid means. In this sense, the machine is as neutral as the concept of canalization, which in turn is as dangerous, if misused. But when used with intelligence a well conceived teaching machine can help us break the bottleneck to allow ideas to move into the near vacuum in so many art classes which every single one of us knows about.

The problem of curriculum materials and art instruction in elementary schools is of such a special order to require extraordinary measures. I don't mean to be facetious but in this instance, it seems to me that perhaps more sense could be made out of it, if we viewed the problem backwards. That would mean to think first about who is teaching art and under what conditions, in order to try to conceive of what these teachers might be able to teach in art, provided we equipped them with appropriate teaching materials. Otherwise, I think, we had better remove our romantic glasses about child art (and I personally do believe that genuine child art is meaningful, important, and charming), because what goes on under the name of art in the overwhelming number of elementary school classrooms is non-artistic busy work or play at best, all the handsome exhibitions notwithstanding.

Unless we are willing to sweep the evidence under the rug that over half of elementary school art instruction is done without benefit of even the slightest counsel by an art specialist, then I venture to say that children could be taught more significantly about art through the use of teaching machines. (Among the evidence to hold in consciousness is the shortage of art teachers now, even if the elementary school should come onto a sudden change of heart.) I am certain that we have not begun to scratch the potentialities either of the growing library of teaching media or of our own ingenuity and imagination.

I realize only too well, that what I am saying is entirely antithetical to what all of us have believed. But, I am not suggesting that we simply settle for ordinary realities as they are. I know that we have tried T.V., and I have seen a few good programs. Most of them, however, make the T.V. teacher act like the teacher in the classroom, and of course they do not achieve what a good art teacher in the classroom could. Furthermore, there are very few art teachers, good or otherwise, in the classrooms, and to hope to get significantly more to do the required job is simply an illusion.

Therefore, I am now assuming that some major transformation must be made to occur in art instruction through the most ingenious means, if there is to be any truly meaningful education in art for American elementary school children as a whole. Furthermore, I think that it is clear that we must seek a resolution largely within the limits of present teaching personnel, technological possibilities, and our own conceptual creations.

I think I have already made clear my view of teaching machines--their essential neutrality, and hence their potentiality for either wise or evil use. There remains one technical dimension of the issue to identify. What are teaching machines capable of being made to do--granted that our intentions are wise, not evil--and what are the limitations of the machines? Before this question is answered, no reasonable reply to my proposal is possible.

A teaching machine, by its nature, is limited to a learning task involving a problem where the solution is already at hand. That is, the person creating the program for the machine which will teach a student how to solve a given problem--that person already knows either the whole answer or the greater part of it. He may not know nuances that someone else could add. But, for all significant purposes, he knows the answer or he could not create the program in the first place. Obviously, what a teaching machine cannot do is to teach how to deal with a problem when the nature of the problem itself is yet unknown, let alone the answer.

Now let us set aside for a moment the question of what a teaching machine can or cannot do in order to move to another part of the issue. This involves the kinds of learning, or problems to be solved by students while they are engaged in the various kinds of inquiry I have indicated--production, criticism, history. In the broadest terms, the basic dimensions of the answers to problems which students will confront in criticism or history have already been resolved. Admittedly, they have been resolved in different and sometimes contradictory ways; but at minimum, they have been identified. Otherwise, there would be no truths handed down to us through paintings and books, granted their diversity. Now, to the extent that such problems have been resolved, to that same extent the resolutions achieved can be programmed. This is precisely why I proposed the teaching machine earlier as a way to deal with the problem of learning to read works of art. Such reading is the expertese of historians, critics and aestheticians. True, they all do not read the same message, which is precisely the reason why I proposed programming alternative readings. I grant that neither a book nor a teaching machine allows for feedback--that is, clarification in terms of unpredicted questions--but to this I will come back in a moment. Apart from momentary feedback, however, the teaching machine can do a job for us by teaching students to inquire into those problems which have known resolutions.

The real difficulty arises in production-inquiry where the nature of the problem is such that it first has to be formulated, let alone dealt with, before the resolution even begins to reveal itself--in in Ecker's terms, before the pervasive quality begins exercise the control that leads to the ultimate resolution--the total quality. It would then appear that we are now at the end of the line, and that teaching machines can be properly converted to use only to teach how to attend to ready made works of art and, it would appear that they cannot be used to teach (call it guide, if you prefer) the very experience of sensing, forming, and suffering through the resolution of a brand new problem, as is the case in the making of any work of art whether by a second grader or by Picasso.

Though I accept this limitation of the machine for the moment, I feel compelled to press on to the inoxerable conclusion. And, to press on, I must first back up to the second grader and Picasso. Are their ways of identifying or sensing problems for art works identical? They are not! Whatever Picasso's difficulties may be in getting into a problem, he needs neither teacher understanding, nor acceptance. He certainly needs no teacher-made stimulation, motivation, enthusiasm, or contagion. Alan Kaprow has already told us that any mature artist, Picasso included, may simply have an "itch." Most often, he doesn't know where it comes from, or what its causes are. And the fact that he doesn't know really has no bearing on the work he does. That the nature of this itch may have a very strong bearing on how the artist gets into his work is quite another story on which Brewster Ghiselin and others have already commented at length.

One of the essences of teaching, however, is to teach so that an itch is felt by the student. Hence, we show, explain, compare, go for a walk. We even grunt and make faces. Fundamentally, we seek a way to connect with the student so that he will create his own question mark, his own problem. Here again, and with the exception of the feedback issue, I see no reason at all why we couldn't make machines do this part only of teaching for production inquiry. Without doubt, the proper machine, properly programmed can do this job better, in the fullest sense of the word, than most if not all classroom teachers; and it can even do it better than most art teachers who travel the circuit from room to room in elementary schools. I agree, that theoretically, there might be some loss because the live teacher will not be there in the flesh, assuming that art teacher would truly do the job well. But, let us not fool ourselves, and let us be forthright. How helpful is the flesh, in this case, when the live art teacher, in most of the places where she exists, travels unendingly from class to class with canned lessons? If the lessons are to be canned, then let's can them in the richest possible way, and then go on from there to free the teacher to do the things she can.

This now is indeed the end of the line for the use of the teaching machine in production inquiry. But notice that in the case of the live teacher, at this point in the production inquiry process itself, one needs to be either all alone or with a teacher who can act as a foil when it appears necessary. Most often, it is advisable to get out of the way. In this part of the process, the learner--and now, it is really the second grader and Picasso--both these learners must struggle through it, each in his own solitude.

There are two ways in which the machine must fall short of a good live teacher. As I have already mentioned, it cannot pay attention to feedback, during the stimulation period, and it also cannot react after the learner in solitude either resolves or fails to resolve the problem. The loss of feedback is there, but the degree of loss may or may not be serious, because when feedback is possible, as with a live teacher, only some of the feedback is productive and leads to clarification. Some classroom feedback is off the point, confusing, and just noise. Hence, the elimination of feedback could turn out to contribute to clarity. In any event, the degree of net loss, if any, could be checked by research. As to the machine's inability to react after the learner has dealt with the problem, so much the better. The teacher then must become involved.

I can now return to sketch what might be done with synchronized tapes and slides (I understand that even a better mechanism is already available) where a master teacher could develop an idea (call it stimulation or motivation) for children, and the classroom teacher guided by a handbook would carry forth with the children. The mechanism would be controlled by the teacher rather than the reverse, as is the case with T.V. where teacher and children are controlled by it. The material would be repeatable at the teacher's option. Even if the teacher contributed nothing, some meaningful benefit would accrue.

I know of no evidence to show that there has been significant improvement in the quality of elementary school art instruction in the last decade, and unless there is such evidence, isn't it time we changed our tune?

Such programmed teaching materials would obviously have to be developed with innumerable variations and in different kinds of groupings. Variations would have to attend to age level and environmental regional differences, and differences in school type neighborhood. Attention would need to be given in the groupings of such materials to relative frequency and amount of time spent on criticism-productive in relation to criticism-historical activities, and age level and particular kind of group would be among the controlling variables. Clearly, judgment on relative frequency and time would have to be open to the teacher.

There would need to be tested guidelines for alternative possible sequences. For example, a group of teaching materials might consist of several small clusters, and whereas it would be arbitrary to determine a sequence throughout, it may prove wise to develop a sequence within the small clusters. Such a sequence within a cluster could be the alternation of critical-productive and critical-historical inquiries. The teacher's guide could present suggested ways of building bridges for continuity at the points where the teacher would control the sequence.

Is there any reason why such ideas could not be formulated, developed, tested, and disseminated? Is there any reason why classroom teachers could not be field trained to use such materials with effect? Wouldn't such teaching be more meaningful than uninformed teaching?

In talking about objectives, I indicated their relevance to evaluation. Here again I would point to work done by Elliot Eisner and Kenneth Beittel and his associates to show that sensible evaluation instruments can be developed. I also point to Dale Harris' and Melvin Tumin's encouragements of assessment potentialities.

AN ESSENTIAL COURSE OF ACTION

The establishment of regional centers for art education curriculum development, as suggested by Elliot Eisner earlier and as I have already underscored, is clearly the only kind of course which could promise to cope with the problems as indicated. Such undertakings must be cooperative to include expertese in art curriculum theory, art, criticism, aesthetics, history, language usage, research methodology, test development, teaching media, public school art faculty and administrators. Just as clearly, the location of such centers in major universities would provide nuclei of the necessary talent along with other essential resources. The school personnel in the region would become involved to play their role. Developments could be tested and demonstrated in cooperating schools, communicated to and coordinated among regional centers, and disseminated in wider and wider concentric rings from the centers. Field training in the use of the materials would be an integral part of the undertaking.

In addition to the tasks assigned to such centers by Eisner, I will add three more major ones:

1. Development of curriculum materials--packaged reproduction collections, literary materials, programmed teaching instruments and curriculum guides, including the test and evaluation of all of these.

2. Demonstration of the efficacy of the tested materials by members of the center staff in the cooperating schools and in the extended region.

3. Dissemination of the materials, including field training to inform teachers about the materials and to advise in their use.

Such undertakings, carried on over a brief period of years could begin to bear fruit. Through a decade of such work we could truly transform the teaching of art in American schools.

May I conclude by now shifting the problem? I am assuming that the Arts and Humanities Division of the U. S. Office of Education is ready to go to work. Now, it seems to me, the questions need to be turned inward on ourselves. Do we have the courage to confront the realities? Do we have the stamina to do the job? And finally, do we have the imagination to break out of our own orthodoxies?

EXCERPTS FROM THE DISCUSSION WITH MR. BARKAN:

Audience: First, I would like to say that you have a remarkable paper which has brought all the things that are being discussed here into focus. It seems to me that I know a great deal about the subject which makes me a very good judge. It sounds very practical. And what I particularly admire is making use of everybody's technics and ideas as we have seen them brought up here. Let me make that irrelevant preface to what I am going to say. As far as ideas that artists are concerned with, I am sure that the history of art shows that they have been concerned with all matters. I can't think of a single issue whether it is the nature of a physical world or the nature of God, or the nature of the internal life, and a whole lot of things that can't even be thought of that artists haven't been concerned with. In fact, I have proposed at one time that somebody write a history of bad ideas which artists have been concerned with, which would have a great deal of relevance to art. But that means not that they didn't know what they were talking about, but they might have been asking questions before the possible answers were available. They also, in another sense, test what people think by being succeptable to ideas. For example, artists; many of them in the thirties, had some of the worst ideas around. Other people were sort of cautious about them. They stepped in and began to behave as if they were true. All of this is very relevant to understanding art. In other words, you can make a correlation in that sense between history of thought in art and history of thought in many of the sciences, because but all of the sciences also are full of bad ideas. They only have one bad idea at a time, by the way. The artist ought to have all the bad ideas which available at any given time, and of this comes another kind of vision and understanding. If the question is: "Are the ideas that you mentioned relevant to teaching art?" I would say, without doubt, yes. But, there is a degree of consciousness of the question that varies a great deal. Now, let's say, at the time of the social realist movement in New York in the thirties, the questions were very explicit. Artists actually got together and said how can we conceive a Marxist form? There were a lot of debates on this. Nobody was ever able to answer the question. A lot of pseudo stylistic variations arose by asking this question. In recent years, there was a tendency not to ask questions in that way. But, again, around pop art there was again a very explicit discussion which had to do with satirical responses to society, neutral responses to environment. All kinds of questions like that were explicitly asked and answered by artists. That's what you are talking about, isn't it?

Audience: I have to say just two things to this. One -- I think what Rosenberg is talking about is that at times in art the question is asked verbally, antecedent to the work of art. At times, the question is asked only in the process of the work of art and can't be formulated verbally. But that doesn't mean that the artist is not concerned with an idea. I think it would be very wrong if we misinterpreted your presentation. This idea you are talking about, has to be formulatable in verbal terms, and then you look at a work of art as an illustration of it rather than embodiment of it. Although the ideas that artists have concerned themselves with are infinite, there has never been an artist who worked without idea, and that's the great danger, you see in talking about art as if it didn't have ideas.

Audience: Mr. Rosenberg and Mr. Taylor have in effect justified that formulation that I made of art as humanistic inquiry. The reason I did it -- and I congratulate you and I approve the quality of the quotations in your paper -- the reason I did it is because I am sure, along with others, that I have detected a tendency in art education to become inured in technology and to depart from ideas totally, to pretend that the only way that artists can deal with ideas is to illustrate them in the manner of the thirties. The fact of the matter, as has been amply pointed out, is that every work of art is an embodiment of ideas. It does not mean that it is an illustration of ideas. Now, whether or not the artist consciously formulates questions as has been eluded to, or whether the questions find their way inevitably into his work of art because of the biologic nature of working with materials doesn't really matter. What does matter, it seems to me, is that teachers of art be sufficiently cultivated to detect the ideas of which works of art are an embodiment. In this way, art education becomes a humanistic discipline in that it enlightens the life of the student who is studying.

Mr. Barkan: There is the question that points to the possible slipperiness of the concept of inquiry, and I'd like to comment on that in two ways. First of all, I think if we want to reconstruct art education curriculum to embody within it a sense of intellectual seriousness, and by intellectual seriousness I again am referring back to what Villemain was talking about -- qualitative intelligence -- then, I think we have go to press it to the point of inquiry. Now, when one asks what's the difference then between let's say artistic inquiry and social science inquiry -- social science also inquires into the meaning of life, or in a significant sense science also does. I can offer an anological reference. The analogy I would offer is what I often try to do with a class of elementary school classroom teachers that I teach on occassion, where I make it my business to get into the content of the course. Some extended discussion of what difference there is in the nature of the inquiry if the elementary school teacher would take the role of scientist, as let's say, when we look at a tree or take the role of artist when we look at a tree. When we take the role of artist to look at a tree we are right back where Rosenberg and Taylor and any number of others have put us -- the works of art, the works done by artists, and the ideas embodied in the works.

Audience: I am wondering about the use of authority, the teacher leaning on the use of authority, and the teacher learning how to use authority, and what all this implies. I think that this postulates training in an objectified way, but it certainly an important question that, underlies whether a center would make teachers more passive or more attentitive as far as intellectual inquiry and self-confidence is concerned.

Mr. Barkan: Your point is very well taken, and here in part I think is the educational dilemna. I come right back to my reference to Foshay and the point that he makes that to hope to develop an ability to utilize knowledge that is handed down and at the same time to become actively involved to create one's own knowledge, if that is taken to be the goal, then, on the one hand, there is no escape from the authority of knowledge handed down. And on the other hand, there is the danger that you are raising that needs to be kept ever in view and paid attention to.

Audience: I think that one of the reasons for the mediocrity in American education is the fact that teachers deal so much in received ideas and don't generate ideas of their own. I think the ultimate authority of any teacher is his own knowledge and experience, even if other people have it, you know, but knowledge and experience that he has derived for himself. It is a continuous peril that teachers rely too much on authority and are afraid to take chances to say things that might conceivably not be so. Indeed the kind of formulation that has been offered here of art as humanistic inquiry relies upon a teacher who is very knowledgeable, who is an educated and cultivated person, and no amount of gimmickry, it seems to me, will overcome the inadequacy in this realm.

Mr. Barkan: I would add one point to that. Teachers like Joshua Taylor can teach us to confront those dimensions in knowledge and those paradoxes in the knowledges themselves in a manner in which I'd say that few, if any of us, in art education can command, and I mean us in this very room, let alone the teachers who are out in the schools. I would say the same for persons like Rosenberg and Kaprow. This is where the expert as model, that is the professional inquirers in the arts as models, come into play.

Audience: I think the word authority is a terrible one. It's devastating to anyone when he is so designated. Anybody working in the humanities who fancies himself as an authority is a fraud. And I would hope that you'd look toward such a character as being not the one who gives the answers, but to stimulate you in the direction of the answer.

Mr. Barkan: But only the authority like yourself can say that the man who presumes to be the authority is a fraud.

Audience: I think it might be useful if you thought of the authority not in terms of the subject matter that he has pinned down -- and he says no you are wrong and gives you the answer -- but one who knows enough about the process that might stimulate you to engage in the same process. I think that's the kind of authority you need to lean on, not somebody who always has the answer.

Audience: Learning must be evaluated in these terms. This is the other argument, that people must be trained to think this way and to evaluate the program in these terms. I think these are the critical parts of this whole problem.

Audience: As I listened to the presentation, I thought that there were about eight different areas that affected the total curriculum, possibly from the first year in school to fourteen years later. Now, did you intend that the whole scope would be referred to as discipline in art education or do you particularize discipline as being related to this appreciation, history, evaluation, criticism, collection of things?

Mr. Barkan: If you mean that I intended that history, criticism and production should be taken as parts of the scope of the discipline, I did.

Audience: Are you including an understanding of educational psychology, that is understanding about the children, the problems, the media, the skills, the activity, integration of these activities, and personal outcome?

Mr. Barkan: No. I did not, and there I thought I tried to be explicit by differentiating between goals which are philosophically derived and mediations in terms of specific programmatic instructions, in terms of specific selections of activities, specific contrivances of specific activities for specific groups of children. The disciplines from which these mediations are derived are absolutely crucial, but I think that one of the sources of the dilemna in art education in the last generation has been our difficulty in discriminating and making distinctions between the services that the various different kinds of disciplines--the disciplines of the arts and the disciplines of the social sciences -- can contribute to the task of the curriculum maker.

Audience: There is just one kind of caution I would like to enter. While personally, I am very sympathetic with the notions that Jerome Bruner has developed in his work regarding helping youngsters learn to inquire into a discipline as a scientist or humanist or painter or what have you. Somebody once raised a question, but which scientist? If you are going to have a youngster think like a scientist, which scientist is he going to think like, and the same thing could be said for the humanist and the artist. When you read a research report, published in a literature whether it is in art or science, it's a lot neater than it unfolded in the human when he was engaging in this problem. So, this notion can be subject to over-simplification. I would like to answer in that caution. The second thing is that this kind of orientation needs of the curriculum, that is a problem-centered, if you will, inquiry-oriented program has certain costs. If a youngster, if a group of youngsters are going to inquire into, for example, the history of art as historians, generally the amount of time that it will take them to deal with their inquiry in a very narrow area is going to cost something in terms of the amount of, if I can use that dirty word coverage, movement across a period, if you will; and this is the kind of decision that needs to be made. So, I just wanted to enter these two things that the notion of inquiring into an area like a scientist has certain problems, and if one organizes a program this way, it has certain costs.

Mr. Barkan: You are right. I wouldn't disagree a bit. This is what I, in shorthand, tried to indicate under what I call sub-problems. These problems, I think are relevant, to what I referred to as articulation of inquiry and instruction.

THE EXAMINED CURRICULUM

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This conference is a particular instance of the belief that the unexamined life is not worth the living. By implication, the unexamined curriculum is not worth the teaching, a view to which I subscribe.

The examination process is a phenomenon worthy of note in its own right. It starts innocently and seems deceptively simple at first. As it proceeds it grows both in complexity and in scope. It is an educational experience which seldom fails to change the ideas of those who enter it. Some of our contributors noted before they left that their ideas had changed within the first week. The process has high potential for friction, but it operates best in an atmosphere of humility and openness. It produces its best results when the participants display calm honesty and reasoned criticalness. Position defending and displays of erudition, although often present, defeat the purpose.

This conference has been remarkable with respect to these matters. It has been marked by calm honesty, reasoned criticalness, humility, and openness. This is due in no small measure to the wisdom of the planning committee in choosing the participants and in setting up the flow plan. At this point the scope of the task is beginning to become evident, and now the further wisdom of the committee is evident in the planned flexibility which will permit the seminar to use its emerging insights productively. I regard the conference as a landmark in educational thinking, both for Art Education, and because of its generalizable qualities, for education in general.

Little that has been said here is really new. What is significant is the juxtaposition of several sets of ideas from disciplines that are fundamental to education, and the obvious impact that will develop from synthesizing these ideas into a working pattern. But the synthesizing process is a difficult one, and very little of it has been done yet. I believe this is the most urgent next step, so I will turn to this problem.

From that which constitutes each of these areas, the parts that are germane to curriculum building must be selected and made available for us.

Since these areas are being used as contributing fields rather than as areas for open study in their own right, the germane elements from each must be worked into an internally consistent and coherent set of concepts which now become the backdrop for a line of applied activity. One does not select from among these germane elements those which he can accommodate or likes to deal with, but faces the more difficult task of synthesizing all of them that are relevant in a way which is useful to the end-operation -- curriculum making. This might be called a process of translation, for merely to assemble concepts from these areas in the language of the several areas falls short of making the concepts functional for a curriculum maker.

Let me stress this problem, for it is acute. Everything said in this conference, and a lot of things unsaid that can be said about each of the contributing fields, has significance for the end-act. How do you get it through to that point? When a curriculum maker starts to work, in what way should his act be different because of what has been said here? Although it would be unduly restricting to try to cast all of the exploratory discussions in such applied terms, nevertheless the only pay-off there is occurs in the act of selecting and developing curriculum content. Sooner or later ideas have to be translated into procedures, and it is advisable to keep that target in mind from the beginning. Even at the theoretical level we ought to know what the end-merchandise looks like and what is involved in producing it.

I recall Fritz Redl's story of the German psychologist who had just completed a lecture on the child. As he strode out of the classroom he collided with a child who was running down the corridor. He jumped back in some dismay and said, "My God, What's that?"

Reactions to the First Six Days

In my reaction to the seminar, I have been acutely conscious of the end-operation -- what goes on when a few people sit down to write a curriculum. There is no more deflating question than "How do you do this thing you are talking about?" That question has been put to me a few times, by people who have listened patiently to the theory of curriculum writing. You may be saved by the bell a few times, but eventually the day of reckoning arrives. When pressure of this kind begins to build up, one starts to reexamine his ideas for their practical applicability.

Let me make a brief comment on the human conceptual processes in this connection. We all know that a person's concepts are of his own making, and that one may easily conceive of a particular referent in a variety of ways, each of which can be valid although different. One tends to build such a mental construct with one eye on the referent, and one eye on some anticipated transaction with that referent. The ensuing concept is thus a map of an anticipated act. It is useful primarily with reference to that act. It may be relatively useless in another kind of situation. If one is not aware of an impending adjustmental demand, or if he senses in a general way that it is coming but has no very vivid notion of what it will require of him, there will be no such shaping effect on the mental constructs he forms.

When we engage in theoretical exploration of a field we are rarely under the influence of an anticipated or impending adjustmental use of the ideas we are forming. There is an air of purity about the affair. It is free to go wherever data or imagination suggest. For scholarly ends this is a good state of affairs. It can yield a body of ideas which have potential in any number of practical directions. All that is left to do is match the particular nature of some problem, with the theoretical constructs that are relevant to it, and then deduce from those principles some specific lines of action that are appropriate for the particular problem. This is the problem-solving method.

The papers we have heard in this seminar have presented principles from several areas of discourse. They are obviously critical for curriculum development in Art Education. I have the impression that practically everything said in them has significance for the end act -- curriculum writing. In their present form, however, they do not supply the operational procedures required for the actual job of selecting content and getting it ready for teaching. The deductive part of the job comes next.

The End Operation

The end operation is a beautifully complex job. I call it problem solving at its best because the kind of curriculum you seem to want, poses for you a thoroughly unfamiliar situation for which there are no ready processes or patterns. In contrast to the prevailing notion that curriculum building should be a grass-roots process, I suggest that it is too complex for that. This conference has exposed that complexity in two ways. First, by involving at least seven distinct areas of discourse, as suggested by Figure 1.

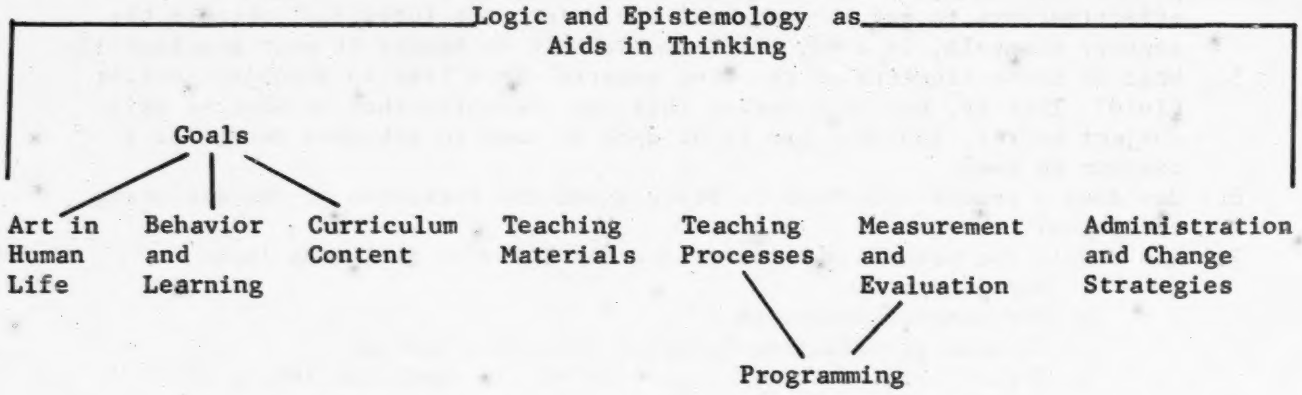


Figure 1. Foundations of Curriculum

Second, by giving us a fairly jolting introduction to the complexity of each of the areas. Champlin's paper alone is enough to discourage most would-be curriculum developers, unless of course they really mean to do the job right for a change. First we heard from Villemain, Ecker, Taylor, Rosenberg, Kaprow, Hausman, Tumin, McFee, and Beittel, whose papers dealt with the problem of content. Then we heard from Harris, Eisner, Barkan, Champlin, and Lathrop whose papers dealt with the technical dimension of the process of curriculum building. Finally we had Foshay's paper that put the whole production process within an overall strategy problem. These papers are beautiful if you like order, elegance, precision, complexity, and significance. They present a set of ingredients no amateur cook ought to monkey with.

There is a much simpler notion of curriculum building. It consists of agreeing on some general goals, deciding on the subject matter fields to include (with no further attention to the general goals), carving up the body of verbal knowledge in those fields, and distributing it over the years. This can be a grass-roots process, as it has been for years. We are not happy with its products.

Implicitly all through the conference you have been closing the door on the old curriculum development processes. When you decide to have students learn to see and to hear, and learn to express their esthetic feelings effectively, you have turned away from the old trail and committed yourselves to the blazing of a new one. The task is really enormous. It requires the clear delineation of all the pertinent facts in the papers we have heard, their assembly into a set of guiding principles, and the translation of those principles into processes for writing a new curriculum in a new way.

Here are some of the questions a curriculum writer in this new approach has to answer.

1. What behaviors are we trying to produce, in whom, and how much? No general statements will do. Specificity is needed.
2. For each of those behaviors, how much of it is conceptual, how much is verbal, and how much is motor? Sorting these out is in itself a touchy descriptive process, but an essential one for reasons that become clear only through an intensive examination of the nature of behavior in the light of a fairly new literature.
3. For each of those behaviors, and for each of its three components, what has to be put into the learner to operate as a mediating variable that can and will produce that behavior?

4. For each of those mediating variables, what kind of teaching material has the logistic capability of developing it, and in particular, what item of material is required for each specific increment of behavior we want to produce? The logistic problem is real, because we have to find the most effective ways to get the external world into the individual through his sensory channels, in a way which enables him to handle it most meaningfully.
5. What do those elements of teaching material look like in a subject matter field? That is, how do I locate them, or recognize them in what we call subject matter, and what has to be done to them to get them ready for a teacher to use?
6. How does a teacher use them to bring about the formation of the mediating variables?
7. How should the materials be programed for the most efficient input
   a. For perception
   b. For concept formation
   c. For use in mediating behavior (decision making)
   d. For survival and improvement under the empirical impact of trial and its feedback (the validation and shaping process)
   e. For the emergence of motives which make the behaviors a preferred part of one's life.

If these questions sound tought, and I assure you they are tough questions, let me add that there are numerous smaller less visible problems to solve all the way along the path outlined here.

For those problems, both the major and minor ones, we need in advance of a major curriculum construction effort, several clear descriptions of the phenomena involved, and of processes for dealing with them.

Now in the light of these observations, let me identify some particular problems that have been involved in our discussions.

1 Selecting a position from which to work. A researcher likes to hold his findings loosely together until there is a substantial basis for structuring them. He resists answering application questions. An educational practitioner has to make program decisions. If they are not made deliberately, they get made by default. A little knowledge may be dangerous in some ways, but it is also useful in some ways. Any decision is likely to be better than chance if its maker has even some tentative knowledge to use. In the field of education we have a tendency to ascribe morality to nihilism in our effort to avoid the label of authoritarianism or dogmatism. We have some fear of giving the impression that the teacher knows more than his students. Caution is highly desirable, but one cannot build an internally consistent program without making some choices about points of departure. Every action group has to arrive at a reasoned bias before it can proceed in an orderly fashion. We cannot ride two competing theories of behavior in one program, although each can be put to test in separate programs. Choices of this kind are faced with reference to concepts about behavior and learning, concepts about the nature of reality and of subject matter, and concepts about goals within the social context. In order to make these choices you need the best descriptive help you can get -- but especially descriptions that make sense to the curriculum writer and teacher.

2. Description versus definition. A lot of discussion has been generated around the question "What is Art?" For our purposes that is not an answerable question, except by arbitrary definition. Even then it is not a useful question. To ask it implies that whatever is art is going to be in the curriculum and whatever is not art will be left out. A more useful question is "What is that thing out there?" with "thing" used deliberately for its quality of vagueness. You all have in mind some ways in which you would like to affect the behavior of people. Implicit in those ideas are your goals, and implicit in your goals is your subject matter and curriculum content. The process of description should supplant the effort to define terms. Words, which have no meaning in themselves, can be assigned to that which you describe when you begin to agree on what it is.

This problem is pervasive throughout the whole field of education, both in the subject matter aspects and in the technical aspects. We have any number of intuitive concepts in these areas which enable us to interact in imprecise ways, but are not clear enough to enable us to do the exacting work of curriculum development. Our whole education jargon is eloquent evidence of this lack of conceptual clarity. There is a major job of description to be done, and if it does not precede experimental research and curriculum writing, much of what we do will have to be done over. For that reason we ought to put a heavy premium on descriptive studies at this stage.

3. Verbalizing intuitive concepts. In the absence of knowledge about human behavior, particularly the higher mental processes, we have fallen into the use of a mythology about the choices people make and the way they respond to their environment. Some of the key terms in this mythology are appreciation, attitude, feeling, value, and knowledge. For years researchers in the field of attitudes stated categorically that there was no relationship between knowledge and attitudes. Feelings are said to displace knowledge as controls of behavior. Somewhere inside of each person are believed to be some elusive values and creative elements of an undefined nature.

It is time to get rid of this mythology. There is a respectable body of literature on which we can build a useful picture of the nature of human behavior and learning. Furthermore, the concepts lend themselves well to the use of models for their portrayal and critical examination, and for empirical studies. The models have the further value of direct relevance to educational planning.

One of the emerging insights in this area is in the role played in behavior by concepts which have not yet been brought up to the level of full awareness, and which therefore remain incomplete, subjective, and unverbalized. Another key insight is that values and cognitive meanings are inseparable aspects of every concept, and that the value element mediates preference while the meaning element mediates comprehension and purposive use. A model of behavior which portrays its cyclincal nature can make these relationships very clear.

The point here is not to elaborate a model of conceptual behavior, although that is an essential part of the curriculum development task, but to put a finger on the trouble that ensues from the use of inadequately recognized and unverbalized concepts, and the kinds of misleading conclusions they permit us to make about educational processes.

Our unverbalized concepts have to be verbalized. Otherwise they cannot be examined, nor can they be criticized, nor can they be matured and made valid. Even worse, they cannot be used rationally in program development.

Intuition is a word which refers to the use of subliminal concepts for making decisions on the basis of hunches, or impressions, or feelings. The concepts are real. Most concepts get started at the subliminal level. The "examined life" idea infers that they should not be allowed to remain at that level, but should be forced up to the level of recognition, verbalized, and validated. The past week has been an intensive experience of this kind, but it is just a good start.

Every subject matter field requires this examination. Efforts to engage in it have turned up a new kind of person who, for want of better terms, we might call a question-asker, or an academic or subject matter detective. He puts probing questions to the subject matter expert designed to elicit responses which eventually portray, for a given field, what objects, are engaged in what events, under what circumstances, and with what consequences.

4. Differentiating creativity from the conditions that permit it. The creativity problem transcends the field of art, and it seems to me its significance in the field of art can be enhanced by looking at it as part of the broader concept. I am not sure how best to approach it, so I will just start listing some of the elements of the problem. As has been said in the seminar, creativity is often associated with rebellion,

delinquency, and social disruption. Studies of creative people tend to support this notion, by showing that creativity is associated with preference for change rather than stability, tendency to delay closure rather than to structure ideas, tendency to challenge old structures, tendency to let incoming perceptions dictate their own patterns rather than to force preconceived patterns on them, and so on. Opposed to these tendencies are the overwhelmingly dominant tendencies of most people to maintain structure, and to find security in the maintenance of an unchanging environment. This tendency is deepseated in the facts of human adjustment. It is perfectly natural then, for most people to resent those who are unstructured and who are responsive to freshness and differentness because they are threats to security.

Dependence on external structure for security is a crippling condition. The democratic ideal, (people thinking and making intelligent decisions) is its antithesis. It stands for a form of security which is derived, not from external supports, but from a sense of internal competence. I have seen beautiful examples of this kind of security in people who had lost all fear of change. The democratic ideal can never be attained until we transfer our base of security from external circumstances to confidence in the self. The first condition is a form of slavery. The second represents freedom.

It will not be easy, in the face of cultural security problems, to cultivate creativity. But one step in this direction is to differentiate between the conditions that will permit creativity, and the processes for the cultivation of effective creativity. With respect to the conditions which permit creativity, the field of art cannot find the solution alone. It involves schedules, time units, tolerance of differences in ideas and values, use of buildings and facilities, type of teacher-student relationships, and ways of teaching. Outside of the school it involves all kinds of community attitudes and relationships. All educators ought to be working on this front together and vigorously.

If we could solve the problem of general conditions, then the problem left for instruction in art would be much simpler. I believe this line of analysis is worth pursuing.

5. Knowledge and values, or is's and oughts. Villemain introduced this differentiation, and it has been alluded to by others. I suggest that it is a critical problem which deserves more attention than it generally gets. I believe that if an educator will once follow it through, he will never be able to overlook it again.

We are all familiar with the dichotomy between that which can be factually stated, and that which is an expression of choice. Let me therefore go directly to a critical reason for separating them, and a reminder that in some instances they will be difficult to separate without very careful thinking.

One of the contributions of our new concepts of human behavior is the realization that a person's values determine his goals, and that the only freedom a person possesses is to be found in the value-formation process. If anyone were to influence the formation of a particular value in another person, he would thereby be determining that person's behavior. This is not true of knowledge, either conceptual or verbal. Knowledge provides a person with useable means for pursuing his goals, but does not determine his goals. Any full explication of this aspect of behavior takes more time than we have for it here. If you are willing to entertain what I say as a possibility, then there is an urgent reason for leaving a person's values alone, and concentrating education on his knowledge. I can think of several questions you will raise at this point relative to the purposes of art education, and suggest that there are adequate explanations of them within the full notion of conceptual behavior.

Now about the difficulty of keeping values and knowledge apart. There are many factual things that can be objectively described without any value tones at all. The fields of color and design are full of them. These fields present no problem for us. There are also some factual things that impinge on what people cherish, and may set off reactions. We have many public values such as neatness, order, cleanliness, and efficiency. They are "good." Their opposites are "bad." When we deal with these matters it takes discrimination and conscious effort to concentrate on what is factual, which includes a circumstance and its consequences, without expressing judgment as to the goodness or badness of the consequences.

Finally there is the realm of clearly personal preferences, all of which hand on the good-bad fulcrum. What is factual is irrelevant. This is a matter of taste; it is intimately tied up with personal feelings of satisfyingness and annoyingness.

If we really mean to produce value-free descriptions of art and education then we must stay away from good-bad statements, at least until the descriptive job is done. Then we will have to make some value judgments about what to admit to educational programs. They should be made by consensus, on the part of those who are affected by them. Educators should not go beyond that point. Every student should be free to make his own judgments about what he likes or dislikes, and the curriculum should be so planned that it leaves that to him.

6. The escape from verbal subject matter. A distinction is now quite generally made between the learning of facts, and the acquisition of understandings. The so-called "new" subject matters are the result of this distinction. In this seminar, as stated earlier, we have spoken of the difference between knowing something, and knowing about something. The distinction runs deeper than is generally recognized as yet. It has not been carried into experiments or discussions about verbal learning. Indeed Ausubel has recently written a book called "Meaningful Verbal Learning," which partially recognizes that verbal behavior can be meaningless, but does not yet complete a distinction we must eventually make. Verbal behavior is intimately related to conceptual behavior, but each has a character of its own, and each operates on its own cycle of input, processing, and output. The basic characteristic of verbal learning is the memorization of data. The basic characteristic of conceptual learning is the forming of meanings. "Knowing about" is essentially a verbal process. "Knowing," is essentially a conceptual process.

The problem is critical because our subject matter is still in verbal form, and little is being done to transform it to conceptual form. Art as a field has always been more conceptual than most others, but the problem exists here too.

Discussions of the structure of knowledge are all couched in the verbal level. They tend to make it more orderly, and therefore easier to learn, but they do not make it more capable of promoting conceptual learning. Figure 2 suggests that knowledge can be approached on at least four levels.

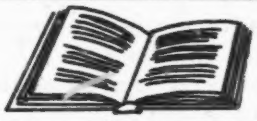
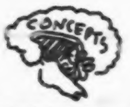
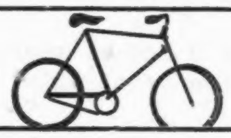
Symbolic strategies developed within the verbal systems that stand for the images and ideas	Logic Statistics Theory of Numbers
Verbal statements (descriptions) of the images and ideas in the brains of learners	
Stored images and ideas of the objects and events perceived	
Real objects and events in nature	

Figure 2. Parameters of Knowledge

The verbal level is not adequate by itself to produce conceptual learning. The perceptual level, at which real objects and events are picked up by the senses, is essential. Discussion can serve to help a person organize and check his ideas, but it cannot give him the ideas, or the percepts from which they are made. As Hoban said, "meanings cannot be transmitted." Subject matter preparation has to start at the level that is most critical for learning, not the topical structure at the verbal level. People live in an environment made up of real objects and events, not of concepts and symbols. They use concepts and symbols as instruments in dealing with the environment, but most adjective behavior is an interaction with these objects and events.

7. The fallacy of building a curriculum around major generalizations. For some peculiar reason we often overlook simple facts. One of them is that generalizations, like definitions, are the end product, not the starting point in conceptual learning. The person who first discovers a generalization (a knowledge finder) derives it from an array of meaningful experiences which are much more concrete than the generalization. A student has to go through the same sequence. He must be his own knowledge finder. He too, must come to the generalizations last. This means that curriculum content must consist principally of the objects and events that make up the environment, presented to the student in a continuous flow of perceptual experiences. Along the way he will develop a variety of mental images and constructs to store and handle his perceptual input, and now and then he will become aware of principles and generalizations as by products. Figure 3 suggests a way of visualizing this relationship.

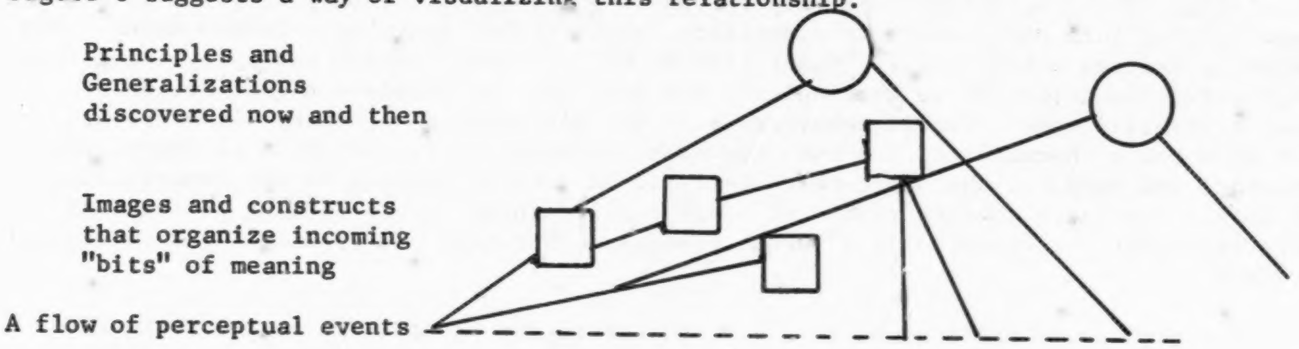


Figure 3. Concepts of Principles as Derivatives of
Continuous Perceptual Experiences

While the teacher should have an inventory of the generalizations he expects students to develop, they cannot be the organizing centers for conceptual learning without disrupting the perceptual approach and turning it into a verbal program.

Implications

One already recognized need is for considerable descriptive work. Some of it can be accomplished on the basis of data already available. Some of it will require data we do not have yet. In my opinion, this need far outweighs the need for experimental studies at this point.

Experimental studies represent a need which in some instances can proceed now, but in many instances we lack an adequate descriptive base for the point of departure. Much past educational research has proved to be worthless because its premises were fictitious.

There is need for a lot of searching talk for the purpose of verbalizing our concepts and examining them critically.

I would strongly urge you to put yourselves first into the role of a curriculum writer, at least long enough to zero in on his problems, and start looking at the field from his point of view. Then lay out his essential questions, and start finding the answers to them.

EXCERPTS FROM THE DISCUSSION WITH MR. WOODRUFF

Audience: I believe in the December 1961 issue of the *Bulletin of Secondary School Principals* there was an extensive article by Ausubel on the idea of self discovery, responding to Bruner, and you seem to be making a great plea here for the inductive process, and that we build on the basis of a working problem, discovering or identifying for ourselves. He points out in this article the necessity to not pour all of our eggs into this one basket of self discovery, and that it is possible on the basis of maturation to use verbalization. What is your response to this?

Mr. Woodruff: A great deal of nonsense is going on at the present time in the discussions of what constitutes discovery learning. Some of my friends are doing research on the process to see if it really is what people say it is, etc. I don't want to get involved in that because I think it is way off the fringe and it really isn't central to the issue. I would insist that it is impossible for one person to transmit a concept to another person. Each person has to make his own concepts. This doesn't mean that he has to go through the whole recapitulation process of the human race in order to do it because it can be speeded up tremendously. There are quite a few things you could say about this. Let's take an advanced mental construct in some field of operation that would explain a whole lot of things that only a scholar would understnad. It is very feasible to explicate such a complex concept so clearly that a model or picture can be drawn of it. That model can become a perceptual object; and by means of that model, that concept can be learned by people who have not gone through the whole inductive struggle the scholar went through to develop it. When I began to talk about this with B. O. Smith and others, one of B.O. Smith's charges was, "You are talking about a kindergarten theory of instruction. If you stay with this, you will never get anywhere beyond the first three grades." I hadn't made myself clear to B.O. Smith at all at the beginning, and his criticism made me go back and take another look at the way I was talking. Now I conclude that we have to do what you suggested. We do a great deal of instruction on the verbal level, but my insistence is that we had better make sure the individual to whom we are throwing these verbal stimuli already has enough of a supply of the basic percepts so that he can follow our suggestions and organize then into a higher order idea. If he hasn't got them, we can't give them to him that way. I insist that this necessity for fresh perception exists all the way up the curriculum clear into the doctoral program. It is not confined to the elementary school. Every time a person enters a field with which he is not familiar, he has to have some of this kind of intake.

Audience: In your comments about values, I wound up thinking that if I understood you, I disagree. So, I would like to state what I understood you to say or imply. It was like this -- that if one defines values or attitudes as set or controlled behavior, then an attempt to deal directly with these would interfere with individual freedom, just to the exact degree that it is successful. This is the way I understood the first portion of this statement. In the second part, I understood you to say that your task as a teacher dealing with percepts was to work with a process which would lead the youngsters to develop values of their own, thus keeping them free individuals. That's the way I understood it. What I disagree with, I think then, is the fact that as I see it this observation overlooks the fact that teachers do in fact try to teach the youngsters what the social values are within which we live all the time. These are values. They are also principles, but they are values. In watching a lot of teachers in Missouri once dealing with the social behavior of their children (which is what they spent a lot of their time on) it was perfectly obvious, of course, that they were imposing these values on the young children, later doing the best they could to indicate the rationale that underlay these values. But most of the rationale is not explained. The values I am talking about here are the whole big set of social values that we try to live by.

Mr. Woodruff: Yes, I think you and I could agree if we could sit down together and it might not take very long to work out the level of agreement. Education has to examine values, and to do this in a very straight-forward and matter-of-fact way. The only thing I am pleading for is that we avoid telling a student what he *must* value because this really predetermines his behavior for him.

Audience: I would like to offer not a trival, but a low-level example. You teach young children not to be cruel; and if they are cruel, you punish them. They simply may not be cruel; and you define cruelty in terms of events that happen. This is not explaining to five and six and seven-year-old children; it is simply imposing upon them. What do you think of this situation?

Mr. Woodruff: Well, you see, there is a difference between values that represent social contracts, so to speak, and values that represent degrees of individual freedom within the social structure. I guess I really am talking more about the individual values because when a person enters or is born into a social group, he is involved in a contract whether he helped make it or not. Incidentally, one of the most fascinating ways to get into the social studies field is to identify the socially contracted values that existed in the minds of the founding fathers, start looking at individual values that have thrown people into conflict with these verbalized social values, and then see what this clash has produced in the way of an emerging civilization.

Audience: I was very pleased to hear your discussion of unverbalized concepts which often I take it is part of instruction. For this reason I want to raise this question. I wrote a paper some years ago about propositions in aesthetics and their verification and most of those concepts I felt existed at unverbalized levels. I know there are some who don't believe in the existence of concepts of which we might not be aware. But, would it not be useful if some systematic investigation was made into unverbalized concepts? These are the things about which we should be informed--by which we should be governed possibly with a good deal of structure if possible. Find out what they are, and then take corrective action if necessary.

Mr. Woodruff: Yes, as a matter of fact, a fair amount of work has been done in other fields to show how these concepts operate. (I don't know whether we want to call them concepts or not because we now get in term-defining problems.) If you will, forget the terms and let me talk about a phenomenon that is going on. There is a great deal of subliminal learning taking place. Most of the perception that occurs is subliminal. The person is not aware of it. It gets into the brain, it registers, and it get organized in the brain without any conscious effort on our part, or any awareness. Once it is there, it becomes a mediating factor in future behavior. So, it begins to control behavior. Now, we have tried to study some of these concepts in various ways. You can do it, for instance, by exposing a person to a series of choices which are stated not so much in definitional terms as in functional outcomes. The person is asked to make choices. In doing so, he commits himself to various choices with a very high degree of internal consistency, and of reliability for a period of time so that you feel pretty confident that you have picked up a rather strong, compelling, mediating structure inside of him which he cannot tell you a thing about. And, then you go through the interview process with him afterward, taking him through a series of paired choices, and say, "Why did you make this choice? Why did you make this one? This one?" And run it down in detective fashion. Frequently at the end of this kind of discourse or dialogue with such a person, he will have one of these tremendous aha! experiences, so to speak, and say, "Now I know why I am doing what I am doing." And he just exhilarates over the thing. Some very funny stories can come out of this kind of interviewing. But those subliminal concepts are there; they can be demonstrated; they can be forced up to recognition by this kind of pursuit.

Audience: I would like to put this in very simplified terms. Some say that Plato dealt with this problem of ought. Having decided what the ought should be. Designing a society to achieve the ought. We want the same thing. The same value. We quite agree on this system of values. We disagree with means. Some suggested in simplified terms the kind of conditions of the kid in the home, in the elementary grades; to give him a chance to rationally examine both values to which he is being conditioned; but you can't rationally argue, I don't think, about whether the art will have a certain system of, let's say, aesthetic values with elementary children. This presupposes a concept of teaching as well, of course, as does engaging in this kind of rational defense of values, giving the student the opportunity to argue--the desirability of these values. I am saying this is my view. So how do you handle this problem. I guess I have given you the answer.

Mr. Woodruff: If I followed and understand you well enough to comment, maybe this is what I see in it. I suppose in part this poses a choice to an educator as to how much compulsion he is going to use in shaping the lives of people in society. A little while ago in Washington we were having a dinner after a research committee meeting at which we had present Colonel O'Fiesh, (I don't know how his name is pronounced. Some of you may know who he is) who was a technical man brought in by Sargent Shriver at the very beginning of the planning of the War on Poverty. O'Fiesh was brought in because he had been in charge of programming the curriculum of the Air Force for quite a long time. He turned out to be a master at this business. In the course of his description to us of the behind-the-scenes thinking that was going to direct the job-core program and lot of things like it, he said, "We can now program materials in such a way that we can absolutely guarantee the establishment of certain values by the time we get through." This alarmed the group that was sitting around the table to the point where we had quite an open discussion about the problem. He said, "Well, if you could do something to your children so that never anymore was there any possibility of the entertaining the idea of fighting somebody, would you do this?" Now, that is the kind of question you have to face. This is where a real value problem exists, and I think you have to take your choice between whether you are going to have a safe society or a free society. It isn't a very easy question to resolve. I think I would go along the line that says, "Let's help people understand the antecedent and consequent conditions that filter all through our behavior; and then if a boy looks at all of this and understands it and says, "I'd rather have the outcomes that Communism will produce than the kind that Democracy will produce," I think he ought to be free to make this choice; a matter of preference. After he has made that choice then we may have something to say about how he participates with us.

Audience: When does he really start deliberating about his choice? When is he capable of deliberating about it? What does he do up until then?

Mr. Woodruff: I suppose this is a very opaque area that you are asking about right now; one that we surely have to look at much more carefully. There is no doubt that beginning in infancy the seeds of one's values are forming; and I don't know how to touch them yet. This is a problem I would like to look at more carefully.

Audience: There is some very interesting research that is being done along these lines with respect to the childhood practices of culturally advantaged and culturally disadvantaged children, and has relevance to a question that you raised. For example, one of the things that people are beginning to find when they take a look at this problem is the way in which mothers respond to the behavior of children in these two groups. A lower-class mother living in a slum area, for example, will say to a young child who is making noise while she is on the telephone, "Shut up, I'm talking" or "be quiet, I'm on the phone," whereas the middle-class mother may say something like this, "Can't you see that I'm talking on the phone and that I can't hear the other party." Or one might see a lower-class mother telling her lower-class child to put a can back on the shelf. The youngster puts it near the edge--she says, "Push it back." The middle-class mother might say, "You'd better push it back or else it might fall off." Now, these are really simple examples but when you multiply these in terms of the kinds of cognitive processes which are elicited by virtue of that kind of statement being made over and over again through the full home style, it really presents a child, develops in a child different kinds of orientations--problem solving, thinking, valuing, etc., and I think that is related to what you have been talking about.

Mr. Woodruff: Those are beautiful illustrations of the things you are asking for.

Audience: I want to ask you about the professional problem that you spoke of, which was putting these various areas together. I have the feeling that what you have said is that while we all have listened to the reports we have never put them together and can't ourselves put them together in any real way. It would have the professional consequence of building people so that the world is more inside than outside. What steps would you propose--do you think you might suggest--for doing this highly professional task that you do not believe can be done by the classroom teacher.

Mr. Woodruff: It is the synthesizing process that you are referring to. I think my inclination would be to start by facing myself with a curriculum-writing job, hypothetically, and then saying, "In all the things I have to do, let me see if I can now identify the sorts of guidelines that I know this man was talking over here." Keep this in the back of my mind as I start to orient myself; and then go back to each one of these areas of discourse and say, "What did he say that has relevance to this problem and to this one and to that one." Then pull all of that together in the structure of a curriculum-writing set of procedures and formulate it as the guidelines for that purpose. It will look different, but it will be derived from the basic course.

Audience: I was very sympathetic with your comments to the effect that we shouldn't become preoccupied with words; that in our inquiries we come upon words that do not induce communication. We might want to talk around these terms to gain some concensus. I would like to project a slight caution, that there is an involvement of words that does seem to be a sort of an intellectual gymnastics, a sort of game of playing that exasperates many of us with the problems of teaching, but there is within the broader context of involvement with language a preoccupation with words that focuses in the extent to which these words meet conditions conducive to communication. So, I would simply extend your comment with the caution that we might pay attention to words in terms of determining which ones lend themselves to the effecting of communication and which ones do not; and therefore get some understanding as to which ones we can avoid and which ones we might not avoid as we begin our discussions, and begin our conversations.

Mr. Woodruff: I saw a lot of this in your paper which I followed through with a tremendous amount of appreciation. You were telling us a good deal about this process of ordering thought and using various kinds of criteria to be sure we were not jumping categories. I surely and thoroughly agree with this.

Audience: I would like to ask you a question that I am sure you can't answer but maybe it will help us with an explosion. What you have said has really pulled the supports out from under much teacher education. Would you like to give us a few comforting words?

Mr. Woodruff: I don't know how comforting they are going to be, but I really am disgusted with what is going on in most teacher education programs today. I am involved in one that I don't like, and I don't have the leverage at the moment to break it up; although, we are beginning to move toward a process that will make that happen. I am convinced that such a thing as methodology is as obsolete as the dodo bird. I don't believe that the future teacher education programs are going to have any courses in methodology in them at all. I think what we are going to do is turn back to these teaching disciplines, and following an analysis of this kind find what the structure is in those fields of knowledge and what the logistic problem is in putting that stuff into the brain of the person and making sense of it; and this will be the basis of our methodology. I have a definition of methodology which is "anything a teacher has to do to get a student do whatever he has to do to learn something." That's the one I would like to stick with. I could say similar things about other parts of the process. I think it is going to have to be completely overhauled.

Audience: Could you say something more about the problem of developing constraints on our freedom?

Mr. Woodruff: Yes. Very briefly because I think this represents a kind of a different problem in a way from what we are looking at this morning. I believe that once a group of people has arrived at any kind of a social agreement as to how they are going to conduct their public affairs and whatever rules they agree for interaction between them, there is no alternative to a police power of some kind to inforce these rules. I would like to see this police power restricted to the protection of people against the encroachments of others. My theory of government would tend to limit it to that, and I am aware that the limiting problem is a very difficult one to do, and that is why it is so easy to move over into all kinds of do-goodism programs. But, nevertheless, this would be the best way of preserving the maximum amount of individual freedom. To make sure the restrictions we place there are those that are placed in the interest of protecting the similar rights and prerogatives of other people, and that's what most of our social rules are trying to do.

Audience: Would you say in shorthand terms that this is the Bill of Rights?

Mr. Woodruff: Yes, basically this would be my approach.

Audience: In much of this discussion the concept of the discipline has come up both philosophically I think and as a practical basis for organization. You mentioned you have turned this back to the disciplines, etc. Do you see any danger here of this much attention paid to disciplines, fixing disciplines? It has seemed to me that when people got to a certain point of interest or knowledge, they invented a new discipline if it was convenient, such as biophysics. We are leaning on a bunch of pillars that are shifting. How do you see this affecting the process?

Mr. Woodruff: Well, I think the job won't look quite so difficult if we can break away from the verbal pattern we are working on in all these disciplines and get down to their fundamental phenomena. One of the simple little things that we always, I think, tend to overlook is that our human behavior, our daily behavior, is conducted not in a context of concepts and verbal or topical structure of ideas, but it is conducted in a context of objects and events outside of us. These are the essences of a subject matter field no matter what you do in the constructing of mental constructs for explaining them. Now if you can keep your eye focused on this kind of thing, then you can follow these mutations and transfers and new discoveries that open up in between fields. There are no fences built around this kind of thing. The fences that we build are built in topical outlines, and I don't think it would be safe at all to go back to one of these disciplines and say, "We'll turn this over to you to handle in terms of your topical outline." This would defeat the whole purpose of it. You must drive these subject matter people to a full description of the phenomena with which they deal. What are the objects in your field, and what do they do; and what consequences occur when they do these kinds of things? Those are the sorts of questions we must drive these people down to, and this is amazingly difficult if you take a few who like grammar for example. Try to find the referent first; and then after you have found it, try to describe it. This is a good game.

Audience: I get the feeling in reading the Process of Education, when Bruner started toying with how to construct a course, how to teach people to think intuitively, that he has backed away from it, and your view struck a chord with me with respect that perhaps the reason why he backed away from constructing a course in intuitive thinking was that he was getting hung up in this overlapping business that we were showing on the board here. That perhaps he began to find himself putting it into old frameworks. I am wondering if this might very well be the problem that you would run into in coming to grips with something as intangible as intuitive thinking.

Mr. Woodruff: I've forgotten that part of his book in which he talked about that sort of instruction, but there is a way I am sure in which we can use intuitive concepts very effectively if we would check them after we have used them. Now, a good many of the "aha" kinds of jumps people make are based on concepts which are operating, that is on mental content that is operating in their brains that they haven't said out loud to themselves yet; but which are operating validly enough so that they can jump to these conclusions. The next thing to do is to work your way back down and see if things stand up after you have done it. I think this is often characteristic of creative people. So it looks to me like it is something well worth cultivating as long as we learn to check it.

Audience: How do you think the development of an understanding of the meaning of works of art might best be developed? Can one word, for example, be said by the teacher without changing the concept that might otherwise be developed by the child?

Mr. Woodruff: Let me quickly sketch something here on the board. I think one can very meaningfully draw a model of the cyclic nature of cognitive behavior. Start over here with perception, get up here into the storage concept formation, process of decision making, and the process of adjustive action. This shows that there is a very important cycle operating here in which you get the input and organization, the use of ideas in determining the future behavior and trial, and a feedback here of an empirical nature which begins to constitute an interaction between these two aspects of the cycle. This is empirical learning, going back and forth across here. Now, if you want to impose the teacher on this process, put the teacher out here. What the teacher does is simply throw words at this student. You are looking here at the student's cognitive processes. We are looking here at the teacher's verbal processes; and they can operate on any one of the four major phases of this cycle with different effects. For instance, while a student is looking at an art object, perceiving it, the teacher's verbal guidance can take the form of: "What do you see? How does it look to you? Did you see this, see that? What do the two of you think you saw at this point? When you get up here to the organization form, how do you explain this? What does it mean to you?" So that you tease the person into coming up with his own ideas. You could do quite a bit of suggesting here, and sometimes I think it is well to do a certain

amount of it. Over here, when the person is using this to anticipate an adjustmental situation, "As you make a decision did you remember this, did you think about that, did you take this into account" etc., etc.," Down here as one carries out this kind of action the teacher can guide his attention by saying, "Now, as you do this, are you carrying out this notion that you had, or that notion which you had? Are you thinking of what that idea infers as to what is going on?" And the feedback process is the same thing. Now, it seems to me that if you do this on a suggestive basis; it you direct attention essentially rather than dictate input, that you can leave a lot of this to the person without interfering with his processes; and, yet, you can take advantage of those occasions on which a teacher's more mature insight can be extremely useful to a person in interpreting something.

Audience: Is it possible do you think that by almost entirely a visual means one could even more effectively enhance the various elements of this cycle? For example, explain Delacroix by means of Picasso and by a dozen other means or other kinds of illustrative or textured materials?

Mr. Woodruff: This is where my lack of familiarity with the field gets in my way, but my guess would be yes, provided the materials you are using are already at least enough familiar to the person so that they carry a meaning which permits him to transfer and do some integrating as the consequence of seeing.

FIRST PANEL DISCUSSION

Mr. Beittel: My role is to moderate this panel but I am going to play it as openly as possible. Our role, as I understand it, is merely to interact, that's all the program says. Now if I may borrow a concept from Barkan and Ecker, which I don't understand, I am going to throw it open by asking you to comment on what the "pervasive quality," as they put it, of the conference is at this point. What are you sensing after three days here, having given your papers and thought toward the charges and having intereacted with some of the participants? Such a broad question, I know, is hard to start on but let's begin there. We'll get specific later.

Mr. Villemain: I've sensed a great deal of excitement and vigor here, and as I contrast the meetings that I have had over the last ten or fifteen years with art education, it seems to me that there has been a great deal more substance and intellectural sophistication exhibited at this meeting than any I am familiar with in the past, and it seems to me that the men who have been involved here have been quite excited about rubbing elbows with various specialties and various fields.

Mr. Taylor: I suppose part of the excitement also comes from the fact that everything has not progressed along a neatly constructive path -- there has been construction, destruction, conflict, etc., and I think that probably at this moment we have reached a point where everything is up for grabs, but it's up for pretty good grabs -- and we have some sense of what the grabs might be like. But that's very good because it means that certain sorts of standard holds have been broken ---

Mr. Beittel: It's up for grabs, but all ideas are still in, so to speak.

Mr. Taylor: Exactly, and everybody seems to be quite excited about the possibility now of bringing some shape to it.

Mr. Harris: I was interested in the fact that this morning things exploded a bit. We've gotten well enough acquainted so that we don't have to be polite any longer and this is about par for the course.

Mr. Beittel: As a Social Psychologist you could have predicted this at a certain point?

Mr. Harris: At a certain point this usually happens, and I think it's healthy.

Mr. Beittel: Why is this, psychologically, can you give us a little cue on that?

Mr. Harris: Well, its merely that we do get acquainted and let ourselves go with our real feelings and real viewpoints, where we have been more formal and polite and academic up to that point.

Mr. Rosenberg: What do you do if this doesn't happen?

Mr. Harris: Then the conference is pronounced dead.

Mr. Kaprow: Then we have to have "a happening."

Mr. Taylor: Of course, part of it is a matter of some of us getting used to the language and the ideas -- that takes a bit of time. Then when you decide you really know what people are talking about, you are ready to object to it.

Mr. Villemain: To follow along with that thought a little bit, it seems to me this is one of the sobering problems that I had not thought about prior to our conference, that has emerged after these few days -- that is, that I think we need to learn how to better utilize our various talents. I'm not sure we have thought this through quite as fully as we need to, in the variety of specialists that have been here -- to think more carefully how we can work together.

Mr. Rosenberg: Who should think about that? I mean, should I think about how to use your talents?

Mr. Willemain: I think the art educators who originally invited us here need to think about that more.

Mr. Rosenberg: I should think so, yes, you are probably right. The organizers of the conference should have a concept of how to use the talents that they invite. I assume that they may have done this in some underground way. They are responsible for our creeping up on ourselves in such a way that we ultimately become useful to them. I wouldn't like to feel that this comes about purely through accident.

Mr. Tumin: I think the formulation that came out this morning, I think it was Harold's formulation, of the threefold goal of art education, specified the three main sets of interests that ran through the audience, or through the seminar group during these two days: the interest in the teaching of art in order that art shall be known and understood; and the interest in teaching art to children in order to help them grow, be creative, open, etc., and the use of art as a source of knowledge. Part of the difficulty in our conversation was that we were criticizing each other for not being relevant to a goal that some were not trying to be relevant to, and I think coming out with these three goals was a terribly important thing. I think it marks, at least so far as I can see, from the fringe position in conferences of this kind I have had in the past, a kind of new awakening in art education about the wiseness and the breadth of its goals that I think is extraordinary. I think it is also noteworthy that ten years ago people like Taylor and Rosenberg didn't go to art education conferences, as far as I know. They were known as distant figures, not as intimate people who could be used; and I see a remarkable of growth in the understanding of the way in which to use talents of this kind. I think it ought to be remarked, Ken, too, that your kind of paper, and Elliot's paper, and Manny's paper this morning, which moved directly at operationalizing certain important problems, instead of sloganeering about them. This is a whole new development in art education. Research is not simply a model, now, research is really a goal. This seems to me to be the stuff and the excitement of the conference.

Mr. Beittel: I detect, along the same line, some of the rumbling questions that we hit during coffee breaks. One relates to the type of structuring that Elliot gave us this morning, in his three foci, which he said were the societal, the subject, and the child. On the side of the subject, I believe one of the concerns was how to utilize the three gentlemen in a row here, Josh, Harold and Al, who represent the discipline core of art, as it exists as a subject. How can we think about them just in a subject context for a minute, and then perhaps draw in Mel and Dale and our Philosopher for the other two dimensions. One confusion may be this changing from level to level. The question is, what is the content part? Josh talks about three types of art history, I think Harold would delineate approaches to art criticism and I'm sure Al's paper gave us a big spectrum of the types of art that exist and the problems that this generates in specifying the individuation that Mel talked about. Could we talk about this topic generally? How do you see the content part?

Mr. Taylor: One of the startling things, I think about the whole conference is that we are all devoted to art, one way or another, in our own way and in our own terms, and then you suddenly discover that somebody equally devoted to art is using terminology that's going in a direction that to you doesn't even spell art. That's part of the problem I think we have engaged in the last couple of days and is part of the problem that is beginning to come out very clearly. I am a historian, on the other hand, my goal, actually, I think the goal of a historian, is to understand as much as I can about art as (I hate to sound like Dewey) an experience. To me history is one very sound way of going about it, as I consider the end of history not losing yourself in the past, but rather the end of history is bringing as much from the past as possible into our present consciousness. To me that is extremely important. I consider history everything that has been done in art up to today, and I am a little resentful of supposing that I can talk only let's say up to 1900 and beyond that I have to be a critic to talk about art. Even you, Harold, talk about history so I can talk about criticism. In fact, I think the two are very close except that the critic normally spends most of his time on what's happening at the moment, although drawing on the past. It seems to me the historian, if he is alive, is quite aware of what is going on at the moment in order better to illuminate the study of the past I'm highly suspicious of historians who don't have some consciousness of what is going on at the moment. Now, so far as this is a subject for the child, I'm quite aware that you can't teach history in this sense as a body of subject matter. That is, you should not teach art (that is, works of art) as simply being elements in a structure without having any quality in their own right. Panofsky points out very clearly that a work of art, to be a work of art, is an object which is a thing you can pat or touch, but also that a meaning is associated with it and without the meaning it is not a work of art. There are lots of objects left in this world which once were works of art and aren't now; and part of the job of the historian is to restore them as works of art.

Mr. Tumin: Will you explain what happens -- how do they become non-works of art?

Mr. Taylor: Let me cite an example -- people get quite exercised these days about early Medieval art -- they think it's pretty fine. About 125 years ago it was considered curiously child-like, and collected, if collected at all, simply because it was mnemonic, it conjured up a past period and was looked at as exotic. It wasn't looked at as art in its own right, yet the object was there, just as much there as it is now in fact, some of them more there than they are now. To restore it to a work of art you have to get rid of this exotic business, it seems to me, which is quite false -- it didn't belong to it initially and is something we have coated it with like an over-enthusiastic patina on bronze -- and somehow to restore it to a living existence, a genuine living existence, not this fictitious one. Similarly, I think Chinese painting in the 18th century was looked upon as coy and very clever and strange. Now we look at it as being profoundly moving and genuine art, but the object was still there. So, what I'm getting at in this long-winded statement, is that if you are going to use these objects, then I can't be unconcerned about the child, because I have to worry about how he is going to be able to give his experience to the work, and then, in reverse, the work can become part of his experience.

Mr. Beittel: In terms of your paper and the way you developed the concept building process in the child or the student, would the art historian and the critic be almost synonymous with the young child in this sense?

Mr. Taylor: I said that the critical aspect of the historian could, carefully programed, become available to the child. The historian's function is to gather the material that allows him, or directs him, toward a critical kind of judgment. It's not one that will snare him back to get involved in a pseudo-historical pursuit, that is, to pretend that he is being an historian.

Mr. Beittel: You defined this through the personal experience of the child, which I think is how Harold defines the critic's role, utilizing all things but going through his own subjectivity, if I understand you correctly.

Mr. Rosenberg: Yes, I think it's good enough for kids.

Mr. Villemain: Josh, could I ask you a question -- there may be a moral there that I had not thought about before -- that is, if I understand you correctly -- you are saying that an art historian may bring into the orbit of what constitutes art history, things that had not been so conceived in the past --

Mr. Taylor: The orbit of art.

Mr. Villemain: Yes -- rather than as an object of historical scholarly attention. Should the field of art education, therefore, try to leave open the door as to what is to be included as art so that future generations of art historian and art educators who come along will have an opportunity to reassess and reintroduce things that, perhaps, in our cultural effort we don't think of as constituting art?

Mr. Taylor: You're baiting me, so I'll rephrase the question. The door must be left open for new interpretations of art, even art that we have known for a long while. To force upon a child a way of looking, only one way, or a series of words you have to use when you talk about 15th century painting, etc., is to deprive him of the pleasure of the works, it seems to me, rather than to enhance it. Furthermore, it means that he has no place to go; you see, once he has learned the 15th century, he has no place to go except to the 16th century. And it's too bad because he ought to be able to go back each time and to have a richer experience. Now that's one way of leaving the door open so it can enlarge us gradually. Now you were getting to another point, that is, if we taught them only in painting and sculpture and architecture would this, then, close the door so that they could never apply these qualities that they are developing, the perceptions, etc., to furniture, to advertising art or to anything else. I have no feeling about restricting it. I think here you are restricted chiefly by the matter of time. If you have to choose that which is going to be most important and have the greatest impact, I don't think you are going to choose a group of kitchen chairs or axe handles in order to get across the emotionally evocative quality or idea-embodying quality of a form or work of art. I think it is wise, and it's especially true when you are talking about paying attention to particular levels of students, not only in age but also in terms of their environment, I think it is exceedingly important that they realize that part of what they are learning about great works of art, that is, established works of art by artists, is also to be discerned in other things around them; otherwise it's likely to be a bit of dreaming and won't last. In architecture, as I think I suggested, regardless of where they live, they could be conscious of certain elements around them that they could begin to see in the way they would look at a work of architecture. At the same time they shouldn't abuse it -- I object very much to the notion that studying the funny papers is one step removed from studying the drawings of Rembrandt -- the step's too big.

Mr. Rosenberg: I think this is an important point -- that, somewhere, you have to restrict the field. Otherwise there is the danger that you would go off into things that never were art -- you're talking about bringing back into art things that were art but which cease to be art because of changes in taste and understanding, but the field probably should be restricted to art by artists and not the things that came into existence either accidentally or through some other purpose. Of course, we can't restrict that absolutely because there were societies in which there was no such thing as art, in which everything, in other words, was art; so that there is a kind of hazy area, and maybe the best way to draw the distinction is practically, as you say, to consider how much time you have to go into it.

Mr. Tumin: For a layman like me, unfamiliar with the world of painting, etc., relative to these other people, that gives me no guidance at all; and I think you have now come right to the point of the two questions which may seem to you like such elementary or rather silly questions that you don't care to answer them, but they are the pressing questions for me and for a number of other people. First, what do you mean when you say "art" and I would at least like you to try to say it without saying "Oh, it's so obvious" because it isn't obvious to me. Second, how do you, by your own standards, judge good from bad, better from worse, in the world of art?

Mr. Rosenberg: Do you think it is pertinent to this . . . .

Mr. Tumin: Absolutely. I think it is.

Mr. Eisner: I would like to endorse that as well. I am very sympathetic to what you have just expressed, Harold and Josh, however, there are other ways in which the field would be sliced by different people and these are viable ways, these are defensible ways. One could deal primarily with notions about art concerning phenomena in the cities, relationships among people, artifacts which are created for everyday use, the use of advertising, etc. The point that I would make is that I believe that one could develop a justifiable position concerning this kind of orientation in our education as well as the one which you've described. So there are competing alternatives which somehow need to be selected on the basis of one's conception of, not only the nature of art, but the role of art in education and can't merely be dismissed by using the works of artists as the subject matter of art education.

Mr. Rosenberg: But you can't define art on the basis of the needs of educators.

Mr. Tumin: Do it in your own terms.

Mr. Rosenberg: Well, for one thing, I think both Josh and I would agree that the framework of the problem is given by history. If you go far enough back you don't have a division between high art and craft but get into the history of the Renaissance and since the Renaissance, as well as in some other cultures, then there is this distinction, which we didn't make up and which is not based on theory -- it is based on the facts of cultural life. To narrow the field down to the West, since the Renaissance we have had art and craft divided. The artist has become a recognized individual who creates in the world of meaning and ideas, whereas, let's say, the furniture maker is a craftsman and doesn't attempt usually, although today there are new complications, as we do begin to get craft that pretends to be or intends to be art, usually a chair that you can't sit on, for example, -- but we ought to put that aside -- there is, in other words, historically a body of work called art as distinguished from other things and these works are the works of artists.

Mr. Tumin: Called by whom art? You're only deferring the problem.

Mr. Taylor: Let me see if I can start on a different basis, which I always tend to do as I move back into what it means to you when you look at it, and I think that ultimately that's the only way you can tell a work of art. It is very subjective, to use an old-fashioned useful word, and I'm proud of it and don't apologize for it. Now when you look at a beautifully formed chair you are delighted by it -- this is one level of delight. When I say level, I don't necessarily mean that this is going to be a scheme, like 17th century schemes of subject matter in painting -- the high to the low. But this is one kind of delight. When you look at certain kinds of painting which are a little bit like a lyric poem, you delight in their color, you delight in their lines, they hold your interest just in that world of sheer lyrical delight. This is another kind of pleasure. If you look at some paintings, however, they do catch your eye but at the same time they hold your mind and engage it with a problem that is far more penetrating than that -- they don't let your mind alone. Rather than making you satisfied with the beautiful proportion of the object, the lyrical motion of the design, they suddenly begin to question rather fundamental bases, fundamental questions, regarding you and your lives, your judgment of things. I don't mean this necessarily through subject matter, in fact, I don't think it has anything to do with subject matter. It may have to do with subject matter or it may not. I think this is true in some paintings that are basically non-objective -- they can suddenly make you sense forces and qualities. Let me sight for example, looking at a painting by Franz Kline. You might talk about one of Kline's painting in terms of its black and white pattern. This, I think, would do extraordinary unjustice to Kline because what I think you really get out of the painting when you look at it with sensitivity is a curiously hard to describe sense--almost a sense of tragedy. There's an extraordinary sense of vitality and emotion which you feel a part of as you look at it. Now you can't equate this experience with the experience you get from looking at a well planned chair. There's a difference in kind and I think that difference in kind is extraordinary important in education. It goes back to something this morning, when talking about education, art as part of our humanistic knowledge, part of our humanistic culture. It has to do with our evaluations of ourselves, of our fellow -man, our sense of tradition of the past, our sense of continuity, and the sense of humanity that spreads into our own time. I don't mean by any means that you interpret paintings in these sorts of words but these kinds of values do, indeed, come out of the paintings, and are part of the paintings, and if you think of them, then, in these terms of value, I think you would have a hard time justifying using, let's say, certain kinds of the vulgar arts in lieu of the arts which in our culture have become the most refinded and sophisticated statements of those problems which go most deeply into our very lives.

Mr. Tumin: Can everybody in your judgment be taught to feel that about a Franz Kline painting?

Mr. Taylor: Not necessarily about a Franz Kline.

Mr. Rosenberg: Let me talk about that a little bit in relation to Franz Kline. In addition to what Mr. Taylor has said, when we look at a Kline today we have in mind also the whole continuum of art which confronted Kline when he painted that picture and how he dealt with the problems of painting as he discovered them fifteen years ago, which in its own way also comprise the situation of society, of education, of culture in general. All this comes into our evaluation of that Kline as an important work of art. Now, one could say every profession has similar problems -- that is, somebody who could say, "Well, I am confronted with the problem of making a new kind of glassware," has to take up the difficulties of creation in the realm of glass. But when you consider the fact that the history of painting includes all these works, which come to us from the Greeks through the Renaissance -- that is, with all the great thinking of art you have a problem very similar to that in a new idea in philosophy, that is, you can't philosophise without philosophy, and when somebody has made a contribution to philosophy we see it immediately on two planes, that is, what it does in philosophy and what it says to us as laymen. Now, I think that that is true about a work of art, and it is not true about a chair.

Mr. Taylor: You sound like a historian -- you're stealing my stuff!

Mr. Beittel: Is it because of these cultural discontinuities that ascribe the lower status to the craft? I can envision a potter saying this about pots, if you allow for the discontinuity.

Mr. Rosenberg: I could envision it too, but I would then want to know who the great potters were, who had created pots of such vast significance, that their problem should necessarily involve my interest simply as a human being, not as somebody who wants some pots.

Mr. Beittel: I was thinking in reverse fashion, that there you would evoke the image of the concept of work and even of annoymity in relation to an object which is formed and fashioned again, and again.

Mr. Rosenberg: That's a subject that we could probably talk about for hours.

Mr. Beittel: You are picking out, as I understand it, the prime exemplars of this type of thing.

Mr. Taylor: Yes, it is much harder to look at a pot as a humanistic project than it is to look at a painting.

Mr. Tumin: Why?

Mr. Taylor: First, it takes two things. It takes an extraordinary eye to determine the difference between one pot and another. Now, I don't mean that in a simple-minded way. For example, the pot from one of your early Mexican pieces, hand done, not done on a wheel, done with an extraordinary feel of the hand, is entirely different from a 5th century B.C. Greek pot. This is a distinction you can make on technical terms very quickly and very easily. There is color difference, difference in form, one is completely symmetrical, the other is not. These kinds of external difficulties get taken care of very quickly, but at the present time I think we probably have a far greater feeling for looking at the Mexican piece and saying, "yes, you see, it has the hand." We have been taught that way. It has what Mr. Fry calls "sensibility -- it has the imprint of the thumb, somehow, and that brings us into contact with the human being. I like these pots, too; but 5th century Greek pottery with its extraordinary perfection of form, demands a kind of concentration and it demands, also, a sense of what it doesn't do, a sense of tradition -- that this is an extraordinary refinement of a formal tradition and to understand the consummate place that this piece holds, requires an extraordinarily schooled sensibility, I think.

Mr. Villemain: There's a greater wealth of meaning in some of these objects.

Mr. Taylor: I think it is more accessible-- not any greater, but it's more accessible.

Mr. Rosenberg: As a matter of fact the problem that you are raising is vast but very much related to the problem of art. That is, the problem of the crafts, since we entered into the industrial era, in which things are turned out without creative application by the maker, has put a new emphasis on the kind of work which we call art. Art is, after all, a kind of work, but it is a kind of work for the worker, primarily -- that is, it is primarily art for the artist, and there is a kind of utopian view that ultimately all work will be done for the worker. This would be the society of the future, and there is quite a strong tradition that looks forward to that eventuation of the machine or mechanized industry. In other words, it is a point of view contrary to the idea that in the automated society there will be no work. On the contrary, the idea is in the automated society everybody will work for the sake of their own development.

Mr. Beittel: They'll all be artists.

Mr. Rosenberg: They'll all be artists. Now, you keep that in mind as a definition, I think it gives you a perspective on why art is so important in the school; that is, these kids who may not have to do work, let's assume that some won't have to do work and some won't be able to do work, that is, are going to be unemployed, could work for the sake of themselves if they understood what the work of art is, namely, what kind of work is involved in art. It's work that goes back to transform the person that produces it. I think that is one of the reasons why it is so important to take up the problem.

Mr. Harris: Is that your criterion of art -- it transforms the person who produces it?

Mr. Rosenberg: Yes, I would make that into one of the ways, at least, of distinguishing real art from art which is simply the production of artifacts under shop conditions, like the man who works, lets say, in a design factory.

Mr. Taylor: We'd have to extend that to the person who looks at it, too.

Mr. Rosenberg: And the person who looks at it participates in this enterprise.

Mr. Taylor: Everybody, you see, would have to be his own fabricator.

Mr. Eisner: What you have just developed, as I take it, is a theory of art. And I would suggest that there are other conceptions than the one you have suggested.

Mr. Rosenberg: You don't have to suggest that -- it's a fact.

Mr. Eisner: It's a fact. And since it is a fact, these other conceptions which are respectable would have different implications for the teaching of art in the public schools but over and beyond that if you examine the history of the teaching of art in the public schools you will find that the goals of art instruction are not simply a matter of relating the instruction to a conception of art but rather using art instruction to meet the other kinds of needs perceived to be important either by the society at large or by the people who are running the schools. For example, in the 1850's we had a conception of art instruction in which children were taught to draw systematically and in which art was conceived of as drawing. In the 1870's you had a conception of art instruction whereby it was considered important to the preparation of skilled craftsmen who could go into the industries. In the late 1880's, by virtue of the child study movement, you had a beginning interest in the unfolding development of the child and the use of art in order to better understand his development. In the 1910's you had a conception of art in terms of picture study -- sort of a "great looks" approach to art eucation, toward understanding the art of the past and the great moral lessons that it preached. In the 1920's you had a conception of art education which again say the child as an unfolding organism and which say his art as a projection of himself whereby his potentialities could be unfolded. In the 1940's you had the influence of a materials approach to art education whereby the work of the modern artists began to enter into the school program, and the notion was to somehow sensitize children to a variety of materials. In the 1950's you had the growing interest in using art in creativity. We get notions by Herbert Read of "Education through Art" not education in art but education through art. Manuel Barkan "Through Art to Creativity" and many other such conceptions of the proper function of art in the public school. And now in the 1960's we're beginning to look at art, I believe, in terms of helping youngsters to begin to develop the kind of awareness that both of you have talked about; and the only point I would like to make is that it is not simply a matter of using the subject matter to determine what it is that ought to be taught, there are a multiplicity of factors operating in the whole social schema, which affect the content of art and the way in which it is going to be taught and these simply cannot be dismissed, because they are empirical.

Mr. Rosenberg: Do these stages divide themselves neatly into ten year packages, that way?

Mr. Eisner: No, I did.

Mr. Tumin: I think Al Kaprow's ideas are very relevant here, because if I'm not mistaken, now, you say almost anything can be used to get to the goal, let's say, of opening up kids and making them feel creative and making them feel more alive. It doesn't have to be acknowledged works of masters, to do so, right?

Mr. Kaprow: That's one way of looking at it because I was going to suggest that art is, in addition to the body of work that exists from the past up to the present, what a man calling himself an artist does. Now, that which he does may be a variety of things, and in fact, startle the public at a particular time by its novelty or even by its former status being reconsidered, as for example, the use of commercial art themes today. But in addition to that, to bring in the issue of self-transformation, which Harold mentioned a moment ago, it is perfectly obvious to everyone that when one is going to a party and puts on one's best suit, one is obviously transformed by that new guise, one looks at one's self in the mirror and says "by golly, I look marvelous -- I'm going to have a good time" - in the same way that other costumes may depress one, as at a funeral, where one dresses soberly. Now, the real issue is not self-transformation alone but critical self-transformation. It's a matter of issue, in the long run, which involves another part of what you have brought up, I think, and that is a sense of what the whole history of culture has meant in terms of its contending with concepts of reality, its sense of what the past has done to present concepts of reality, how this interchange takes place and finally what this does to the individual. It's a kind of transcendant activity but not necessarily in the "heaven-sent" sense. I don't think that we are now in such a comfortable position (and here is where crisis enters into present concerns with art) we are not in such a fortunate position as some of the people in the past who thought that through art is a better and better way of life. It may, in fact, I've seen this happen amongst some of my colleagues, make one feel miserable.

Mr. Beittel: I take it you wouldn't like the word, perhaps, "the humanistic inquiry," to be imposed on your work?

Mr. Kaprow: I could if you take the word humanistic as involving tragedy, too.

Mr. Beittel: I wonder if there is any conflict between these ideas.

Mr. Rosenberg: No, we agree.

Mr. Kaprow: I think Feldman's word "humanistic study" is perfect.

Mr. Taylor: As long as it doesn't mean a sort of dry taking away from your experience but rather making you feel a part of the "humanistic study."

Mr. Rosenberg: As long as you are sure he doesn't mean putting a lot of human beings into the paintings? Which is what is usually called humanism in art.

Mr. Tumin: Here we are on the verge of at least suggesting a theme which runs contrary to one that was coming through strongly at the conference. I sensed during the conference that there was emerging a kind of consensus, either willing or unwilling, that it was best to start as early as possible with great works of art in order to achieve the three goals of art education whatever they might be, not just art for its own sake, but out for the kids own sake, art for knowledge; but that a primary instrument would be works of art. Now I am beginning to think that we ought to entertain the possibility, and I mean this seriously, not just for discussion here, that you might better be able to come to the goal of the appreciation of works of art, not by starting with works of art but by getting kids involved in things that you would call, if you will, artistic experiences, of their own, where they are beginning to develop a knowledge of certain kinds of feeling that happen to them when they are engaging in certain kinds of activities which they then, by analogy later on, begin to see are present also in the works of art. To start the other way with the work of art to try to cultivate the feeling, I think, would leave you remote from the child.

Mr. Rosenberg: Why would you call that art education? Aren't there other ways and other means by which you could create the sense of apprehension of environment and do all sorts of other things with children in order to give them a sense of physical and sensual apprehension? The minute you bring in the possibility of getting to art with things that have nothing to do with art, believe me, you'll never get to art, and I don't see any reason in the world for calling this art education. Certainly every child needs to be, as we have been using a phrase here -- "opened up" and made to understand how life isn't purely a matter of abstract ideas -- it is also apprehension through the senses, etc., but why call it art education. It could be called psychology -- it could be called . . .

Mr. Eisner: Why not call it art education?

Mr. Rosenberg: Because it has nothing to do with art.

Mr. Taylor: I think we're getting into a conflict which doesn't need to exist. I think that you are quite right that the child has to begin with the kinds of experiences he might anywhere encounter. You can't expect a small child to distinguish between an experience he gets from a picture and an experience that he gets from an object -- I don't think he does. This doesn't mean that you don't use great works of art for children. You just don't tell them they are great works of art and I don't think you would object to this.

Mr. Villemain: You might not want to ask them for a mature reaction.

Mr. Taylor: Absolutely not. If they talk about the most beautiful paintings in terms of their subject, etc., this is all right. But, at the same time, I think you have to reach out and use those kinds of materials around them that will be useful in building precisely those kinds of sensibilities that will eventually allow them to get into the work. Here, I think, we probably disagree because I do think that there is this kind of training that can go on. I share your feeling of danger that this kind of training might be assumed as quite self-sufficient, that if this training is taken care of, then automatically you see, they move into art -- there is no such thing. It always has to be done hand in hand with art and with great works of art.

Mr. Tumin: Sure. And we are even suggesting this really as an instrument for getting to great works of art in a way that might be easier than you, Harold, seem to have been suggesting here, not in order to duck the issue.

Mr. Rosenberg: You yourself said that you don't have very much familiarity with works of art but you do have familiarity with all kinds of other experiences. Now, why didn't you get the art by these other routes? And what makes you think that once all kinds of techniques have been evolved for performing these functions that you want performed, and believe me, I'm not against their being performed, at what point will you get to art? You are actually assuming that the relation is one between the organism and nature or various kinds of experiences, and that art, somehow, is simply, there.

Mr. Taylor: I think that a kid when he begins, has to be sharpened in terms of everything -- sharpened to make him aware of things, to make him respond -- this has nothing to do with art. Although it is necessary. He can't look at art later if he can't respond to things sensuous and worldly.

Mr. Villemain: Make discriminations --

Mr. Taylor: Make discriminations, yes, and I was suggesting that this be carefully studied to make sure that it is as broad as possible, not limited, as I said yesterday, to red, yellow and blue and standard little block toys and that kind of thing. It has to be broad. Suppose you begin there -- that's his total activity as a child. This is kindergarten, let's say, I don't know where this fits, but it's very early, but it becomes a decreasing kind of tendency. Just as a child scribbling is perfectly happy but very quickly has to do something about it, has to use it, has to put it into form, has to give it meaning, etc., so that this simple sort of vegetable experience isn't going to be satisfactory very long anyhow; but at this very same point supposing that we start with that much of this kind of general looking and a little bit of art in there too. Looked at almost the way he looks at nature or anything else and it might be abstract art or non-objective -- in fact, I think preferably. It doesn't matter. Supposing that that get larger and larger, that increment, and the other gets smaller and smaller. Now at a certain point in his life, and I think this is natural whether it is built into your curriculum or not, it's going to work because he is going to drop the serious interest in the extra art, in the physical activity, simple sensuous activity, etc., and give himself over to the other experience.

Mr. Rosenberg: I think you are too optimistic for one reason -- you are leaving out the presence of specialists who could extend this extra art training to the most complicated course . . .

Mr. Taylor: I was talking about, you know, how you move from modeling clay into making free-form jewelry to burning your fingers in the kiln -- this is exactly what is happening now, this is what I don't like, because instead of the minds being developed and the hands developed, we get waylaid, and that's not going to move you into art.

Mr. Eisner: But on the other hand (I hate to be playing the devil's advocate) but I don't think, that it's right to dismiss such "art activities" as the making of free form jewelry. There is a very serious sense in which an adolescent, for example, can involve himself in the making of a painting or a piece of sculpture, which, for him, truly is a moving aesthetic experience even though the product that he makes might not be hung in the museum of art now. I would say that if art education has erred in the past, it has been in the direction as you suggested. As a matter of fact, a Franz Cizek would preclude from his classroom adult art, period, because of a concern with influencing the child. He didn't want to influence the child and I think if the field has erred it has been in that direction, but I don't think it will be a virtue to err in the other direction either.

Mr. Rosenberg: But I think it was made clear by somebody during this conference, I think it was you, wasn't it Professor Taylor, that a clear distinction should be made between what children can understand and what they can do and, if one required that they should create works that reach a certain standard, obviously the whole idea would be destroyed.

Mr. Tumin: He's saying something else, that in doing you come to a kind of understanding.

Mr. Rosenberg: We all agree about that, but I think he is also saying that we cannot require that in the doing certain standards should be set that will say, "if it isn't a work of art, don't do it." I think we all agree about that and it's an important point.

Mr. Taylor: Very early the student has to learn that what he is doing may present a satisfactory experience to him but he also must have the "out" that this experience leads to something more -- that's beyond his manual capacity.

Mr. Villemain: I think this can be researched and I dare say we haven't done an adequate job of it. I would, for example, like to know on empirical grounds, just what it is that a child can get at various ages from a Matisse or from an Athenian pot. I don't think we can do anything at this point but guess. It's fairly obvious that a Shakespearian love sonnet is going to be nonsense to a child of five. This is a kind of a gross observation to make. The mature meanings that are available there, are simply not available to the child. So we should really research this matter. There are two things that need research here, whether or not we can successfully move from axe handles, or what have you, to paintings and sculpture -- how we can systematically and with assurance move from these to what we want to call great works of art. We need to research that and I think we also need to research just what it is that we can properly expect from very young children in their responses to historically excellent art.

Mr. Rosenberg: Would you include the differences between the nonsense of a Shakespearian sonnet to a child of five and other forms of nonsense, I mean like the nonsense of a comic book? That would be a legitimate study. There may be some kind of residue in the Shakespearian sonnet nonsense, in the sense that it is nonsense to this child, that could turn out to be quite valuable, I think.

Mr. Villemain: But if there is, we ought to discover it.

Mr. Taylor: This is an exceedingly good point because I am convinced (and you know I am an amateur, I can project this, I don't have to worry about it -- I can go back to my history of art) that when I mentioned about children being read to things they couldn't read or things they couldn't write, I am all in favor of children having Shakespearian sonnets read to them -- they don't have to know all about universal love, there is something very wonderful about it, in the sound. Furthermore, I am all in favor of having small children having poetry read to them in other languages, which they don't understand. This is not nonsense in the comic book sense, but real quality that you are building upon. Later they will come upon it and say, "Oh, it has this extraordinary level of meaning to it." It hasn't been falsified you see.

Mr. Villemain: We are all also familiar with what has happened to so many of us, and maybe it happened to Mel, I can remember in public school days when I was exposed to certain symphonies -- well, it took me years to get over what happened there -- there was a miseducation going on.

Mr. Beittel: There is a certain platonic overhang here though, is there not, assuming something such as Plato, or later Read, via Schiller, that "forming" has this positive influence on human beings. This is why I understand Montaigne was awakened by the violin. I don't know how he felt about that in his later essays, but this was a fact, this was practiced in various periods in history. We don't know really about this assumption, do we? You're suggesting we research it.

Mr. Rosenberg: I agree there ought to be a lot of research in this field provided we can establish good hypotheses.

Mr. Beittel: Elliot brought up a question, which I would like to bring back to Al, concerning the "out" which is in going back to the work of art, which can be apprehended much beyond the level of performance. It is not quite resolved for me, at least, what role the performance plays. In other words how these two things stand in relation to each other. Now the tradition has been in art education, as I think Elliot pointed out, more in the performing, and now we want to expand this notion, and you gentlemen are helping us do this nobly here. I am still concerned about the role of the performing -- both in relation to and separate from, if I may put it that way -- what you gentlemen represent. I wonder if Al would address himself to this or if any of the rest of you would.

Mr. Kaprow: Well, I think Harold before referred to how if methodologists or technicians or specialists get hold of certain basic tools for the young child's use as an artist, this could be immediately turned into a vast program of complications, just for the sake of testing. You could direct it away from the purpose which is to let this kid become acquainted with art by doing it. On the other hand, there is a specialist called an artist who, if he is gifted at teaching, in the presence of that child might turn those very same materials which at that early point are not necessarily great works of art, or not associated as materials with the making of art, for instance, they might not be paint or wood to carve; they might be nuts and bolts or strings or whatever, just by his very presence and let's say more than merely intuitive grasp of his teaching job; but I think by a sense of the theatre of his presentation, he could very likely turn this activity into a profitable one that if it doesn't verge on art, actually is art. And it's at that moment no different than the explorations of modern artists with their own new visions. Even if it is only on a very rudimentary level for the kid -- it might be just as intense. So I am willing to imagine, because I haven't seen enough evidence of this in the schools, that if we were able to stimulate more artists to enter into especially the lower grades to teach or set by example a tone, we might begin to come close to this kind of broad idea that you are referring to, Mel, where it doesn't have to be only a great work of art that is shown a child, though I certainly would want that there too, but it can be something we call just life itself and at that point maybe a chair which a child might make could be a totem as much as something to sit on, could be "magical" as I like to put it. I have seen it happen in little classes here and there in out-of-the-way places but I think it could happen much more broadly in the United States and so I suggested, and I hope we can pursue this in some way, that more artists who are gifted and interested in the teaching area be brought into the schools as examples, as teachers, as artists in residence, if you want, and I think it might be very stimulating.

Mr. Beittel: We are moving toward the questions which I sense are in the minds of the participants at the conference, that is, what are the exemplars, or archetypes, or whatever you want to call them, that you gentlemen represent, which we should try to build into our curricular activities? For instance, when Bruner tries to exemplify with some educators and with some mathematicians, what it is to think like a mathematician, we can follow his reasoning here, he sets up a rather constrained environment in one way but an environment in which key things are about to be discovered. He is saying in essense that eight year olds can discover the law of quadratics; and this is a key concept to mathematicians. I think one thing that art educators would like to know is, what are some of these key concepts, are they verbalizable; if not, can you represent them? I don't think we would mind if they had to be acted out, or even "danced," as Mel put it. What are some of these key notions that we can focus on so that we don't dissipate our energies in all sorts of useless and unrelated activities?

Mr. Taylor: I'm aware that the difficult point in the program I suggested is precisely the swing between these two areas and this is the very tough point. You can argue the virtues of doing and you can argue the virtues of studying the painting -- it's in terms of the teaching now -- at what point does this transference begin to take place, and I can't imagine a greater help in this than the artist, not so much as the teacher, but the artist as a kind of model of the operation. I think it is asking an awfully lot of the artist to ask him to teach. I think you are asking him to take on a great deal of responsibility that most artists are neither prepared or willing to take.

Mr. Rosenberg: When we talk about artists who will turn the tables that way, I quite agree with you -- you are not dealing with materials of art in the sense of pictures or sculpture, etc., and the artist was taking pieces of paper or something else and doing something with it, how would you define an artist? What makes this fellow an artist? Is it the fact that he has been concerned with painting and sculpture and that he, in a way, becomes an exemplar a type that has all or some large amount of art in his mind? Isn't that what is involved here? I mean he is like an embodiment of art history, in a sense, in a living sense, and he has made himself into the present moment of art history, so if he starts fooling around with cigarette packages, etc., art history is speaking through him. So in that sense he becomes the ideal teacher, but if you want to get rid of him or put him on the side lines you have to fill in for him and then you have to take art and put it in there instead of him. Isn't that the way it goes?

Mr. Tumin: I think it may be a serious mistake to assume that artists are good examples of art in action or that writers are good examples and models to put in front of kids of what writing is about, because the disparity between the activity and the product and the external presentation of self of the person himself, can be so great as to throw kids off. And this leads to a very important sociological problem, insofar as art education is concerned, part of which is reflected in the attitudes the boards of education take to art education as a frill subject. Art is defined as effete -- it's feminine -- it's sissy stuff -- it's for exotic people, that is, queer people. What in the world can be done in the schools, if anything, to make art masculine, strong, popular, in a sense, like athletics (I don't ever expect it will be like athletics for young kids) but what can give it a better place in the culture of manhood in American society today -- is there any hope for that? Has anyone found any ways of gettting it into the kids?

Mr. Eisner: That is precisely the kind of question I would like to ask you, as a sociologist.

Mr. Tumin: I am just encountered with despair -- the definition of art as feminine and effete.

Mr. Rosenberg: I don't think this is as true as it used to be. Back in 1936 the Van Gogh Show at the Museum of Modern Art drew a bigger attendance than the Yankee Stadium. Up till then that had never happened and the situation has been quite different in the past thirty years.

Mr. Tumin: That datum sounds just like the one I had thrown at me when we were despairing about the non-reading habits and the non-music listening habits of Americans, someone said "More people buy symphonic records in a given year in the United States than attend baseball games" but what does that mean?

Mr. Rosenberg: It means the decline of baseball.

Mr. Kaprow: You know one simple explanation or possible solution to this problem is to let people see an artist.

Mr. Tumin: Most artists I know would be horrible to bring into a classroom.

Mr. Kaprow: No, I don't think so. I know quite a few artists that would be perfect for the job. Actually, one of the greatest fears the people have had about something they don't know about is that they don't know about it. You know, a Jew has horns, etc., etc., and then somebody at last meets one and he finds out that he has other things wrong with him. So at least he doesn't fit the category. Now I think that the assumption of a great number of people about the artist, that he is effete, strange, unreliable, etc., simply doesn't hold up when, in fact, they meet this person. He may become more dangerous to them for different reasons, but in other cases he might become a great relief to them, and I think that my suggestion here, insofar as it can be put into operation, might help.

Mr. Eisner: The concern of Bruner, I think, is not so much the introduction of the scientist or the artist into the school, but rather establishing those problems in the school curriculum that will engage the student in the kind of activity that the critic, historian and artist engage in. So that if one took this model as a way in which programs might be organized, we would be in a sense going to the historian to find out about the kinds of problems and materials that perhaps could be simulated and given to youngsters, let's say at secondary school level, into which they could inquire in order to arrive at a product which would be kind of quasi-history, in order to learn something of the procedures that the historian engages in and we would be setting tasks for them so that they could function in a way like a critic functions, and in other tasks as an artist functions. Now this is one kind of rationale for educational planning, but I would like to add that the notion of art instruction as adult intervention is to children's and young adolescents' art activities was itself a questionable enterprise in the last twenty years, so that it may be erroneous to assume that in most classroom students received art instruction. They may have been engaging in activities but they may not have been receiving instruction. Now if one established an experimental situation whereby students truly received instruction in the making of art and if this was tied with the looking at great art, we might reap consequences that are exceedingly valuable. As yet, I think this has not been done.

Mr. Harris: It might reap consequences that you wouldn't want, too, because you would build criteria and the individual would discover that he isn't up to those criteria, his own performance can't match those criteria and he will reject the whole works.

Mr. Taylor: This is the question I was going to ask you. We have been talking about, I think the kind of disaffection that sets in somewhere along the line with small children. Small children don't consider art effete or effeminate. And at some point they begin to. These days it is not only the young gentlemen, it is also the young ladies who begin to look upon it as beneath them. I am curious as to what point this is, and whether it is simply a matter of growing up, and I think not, because people don't grow up that innocently, or whether it is what they engage in. My own sort of simple-minded and cloistered theory is that quite possibly at a point in which they feel that in terms of art they are inadequate -- and someone else is good -- one argues, in the normal way, that then naturally what I do is virtuous, what I do is the masculine way, what he does, then, must be the effete way. And they sometimes don't get over this. I know that first year students coming into the university still hold this notion that to be open in discussing art and what art forces them to discuss, still has this lingering sense that it belongs to other people. They quickly get over this at the university, you can trip them, but this shouldn't have to happen.

Mr. Tumin: You have the support of "culture" in the university, that you don't have in the peer groups of adolescents.

Mr. Eisner: There is empirical evidence regarding the effeminate aspects of art and aesthetic values. For example, on the Alport, Vernon, Lindzey Study of Values you find that the aesthetic value for women is significantly higher than for men.

Mr Taylor: But how is aesthetic judged there? You see, you get back to the rhythm-balance-harmony school -- that's exactly the point at which a serious kid is going to drop off because to him that is peripheral and then pretty phoney -- he doesn't really care about the tidy universe at that point. He is interested in other things though, that are much more germaine to art than a tidy sense of order. And as long as you stick with only order as the element in art, which I must say in most art it isn't, there may be an ingredient but it certainly doesn't stop there, quite naturally he is going to consider that out.

Mr. Beittel: In other words what you are saying is that in a degree the art presented him was, indeed, effeminate.

Mr. Taylor: Curiously, it's truncating. Instead of opening up experience and challenging his mind, instead of making him realize that there are big problems, which I must say most kids like, the earlier they can be treated like adults and think big, I don't mean falsely big but I mean really engage themselves -- and I think the kids nowadays engage themselves very early. After all they learn most not in the classroom but outside. You talk about adult intervention -- indeed, adults intervene long before they get into school and all the way through. You can't pretend, you see, that they are not influenced constantly all the way through.

Mr. Villemain: There's a sociological consideration that I wish Mel would talk about a little bit, if he would, to help us think about it. It is tied up with the phenomena, or the problem you have already posed. One thing we certainly have learned, haven't we, about curriculum change, and that is it is wound up with social, economic, political -- economic vested interests are involved here, the publishing world, and power structures, and status symbol systems. So there is a sense in which the U. S. Office of Education was utterly naive in spending its monies to bring a group of scholars together to talk; if they want curriculum change maybe they should have given the money to some office on Madison Avenue and had it railroaded into the schools, you know. But there is a serious question here, it seems to me, to address ourselves to, and that is what the strategy, above and beyond contemplating and discussing, deliberating and writing and researching together? What is the social strategy for bringing a more secure place for not just the one art but the several arts?

Mr. Tumin: I think it is terribly important when you ask that kind of a question, to state what are your reasonable expectations; and I would like to offer this formulation. It is reasonable to expect only the tiniest portion of the population will ever be gifted artists, it is reasonable to expect that a somewhat larger portion of the population, but not by any means the overwhelming majority, will come to a fairly deep and sensitive appreciation of the arts; and it is reasonable to expect that the vast majority can come to have some kind of experience that we call "art experience," if you will, without ever getting to art, except on the fringes. Though one can strive and struggle always toward bringing them to art, one ought not to feel that his art education program failed if he didn't bring them to art, if he has managed to bring them at least to those kinds of experiences we talked about as developmental experiences. I'm going to call this art education because it overlaps with the very same sense of responses that you get when you do come to art.

Mr. Rosenberg: Would you say this about everything, I mean any subject that's taught?

Mr. Tumin: Yes, I think there are natural gradients of responsiveness.

Mr. Rosenberg: In other words, you are going to have a vast majority of people who will simply not know anything very well, is that what you've been saying?

Mr. Taylor: That these others know that it exists is terribly important. I think this is, at the moment, of growing importance. A lot of people look at the gaudy pictures in Life Magazine, they don't know what it is about and most of them don't even use it for name dropping or cocktail conversation, and yet they take comfort in the fact that it does exist and they can believe it is worthwhile even though they can't quite sense the nature of that worthwhileness.

Mr. Tumin: From these experiences you come to know the things that you can't do that others can do that involve skills . . . .

Mr. Taylor: Provided it is not in opposition and you don't resent it.

Mr. Tumin: I want to get to the point where people no longer say "Oh any kid can draw that Paul Klee." If only that could be eliminated from the thinking; and you can get that from people who really don't know art but only know it from the outside, actually.

Mr. Eisner: This is a question that Francis raised, that is, given the current situation, what do you do to develop a more secure place for the arts in American public schools?

Mr. Tumin: For education or for the arts?

Mr. Eisner: Well, he had broadened it to include the arts, perhaps we could deal with art education more specifically. One of the things that has been done in the past -- there are in this country fish-bowl schools -- schools that serve as lighthouses, as paradigms for other school districts and other schools. Institutions of this type could be used to develop really innovative programs which would serve as exemplars to other school personnel and could serve to influence them. This is only one way of doing it. The U. S. Office of Education has taken a different kind of route. The history of the Office of Education in previous years has been one of data collection and data dissemination. The current practice of the U. S. Office of Education is far more than that. It's innovating in education and the provision of funds for this conference is one such effort. Now the question of efficiency and effectiveness as compared to Madison Avenue, vis a vis this conference is an interesting one. I think the U. S. Office of Education was right. But I think there are many routes to this. The construction of materials, the establishment of research centers, the development of fish-bowl programs in the visual arts in certain schools, the publication of research reports and articles, by the way, in journals, in the field of general education, which are virtually absent of anything in the field of art education. About a month or two ago I did a little library research. I went to the three major education journals in the field of education, The Harvard Educational Review, Teachers College Record and The School Review, Chicago, Harvard and Teacher's College, Columbia -- and I looked up from the 1920's to the 1960's the number of articles in each of those journals dealing with the role of the visual arts in education; and perhaps over that period there was something like fifteen articles published from 1920 to 1960 in these three major journals, so that one of the things that we do in this field, and I think other people in other fields do as well, is to talk to ourselves, but we don't make much of an effort to talk with people outside of our own field in terms of the kinds of things that the field of art education has to offer. I think this would be one other kind of mode.

Mr. Taylor: I would like to point out that two things that seem to be acting at the same time here in terms of public relations in places where they count, that are sort of puzzling. I am judging this from students who come into the university having had what education they have now. One is of course that very few universities recognize for credit courses in art. So one place you have got to look to and look fast is the creation of programs not patterned after what the universities tell you, because they don't know what is right, but by creating a program that is so good that you sell them that it is right, so that it will be respectable for those students, the best students, who are in strong competition to get into college.

Mr. Tumin: Make it a major subject which anxious parents will let their kids take.

Mr. Taylor: Now the second point to this seems to be the difficulty because it is rare that you find a brilliant student who has any training in this area at all, simply because he wasn't allowed to, and he didn't dare to. Now this is a kind of pessimistic view for me to disclose. At the same time over the last ten years there has been a fantastic growth of interest in exhibitions at museums, the attendance has swollen tremendously, the general publication of art, in terms of books and general periodicals, etc., has increased incredibly, in terms of only ten years ago. A lot of this is for the wrong reasons -- I think this is irrelevant, the fact is, it's there and people are aware of it. So that on one side you have the hardest situation to face, in which you are forced to the possibility of being crowded off the field entirely. On the other hand, you have the public accepting more and more the existence of art, and difficult art, no longer just happy things in big, gold frames that they can go and not look at, but really willing to work at it and they want to. They go to an exhibition of contemporary art and talk badly about it while they are there and the next time they have an exhibition of contemporary art they go back to it and they talk badly about it. I don't care whether they talk badly or they don't, they go. So, you have, one, a willingness of the family, and the family is important, to accept art as a fact. Now, somehow, this has to be tied in with what goes on in school, and at the present time I don't think it is, and on the other side you have to fight on the competitive, academic credits side, so that the two things can come together.

Mr. Eisner: This is something of a social paradox that's happened in this country and I couldn't agree with you more. The national merit scholarship program and the college board examinations, for example, have no sections on art. The difficulties in testing in the field of art are enormous but one of the things that colleges "go by" are certain kinds of test scores, certain kinds of standardized procedures whereby they can become quasi-objective about who gets in and who is excluded. In Tests in Print, which is a book listing all of the tests that are published in this country and in Europe, there are about 2100 such tests listed. In the fine arts, that is in art, music, literature, etc., there are 26 sets out of the over 1200 tests. In the visual arts there are 10 such tests, and of the 10 tests in the visual arts, six of them were published in the 1930's, so that we have a situation which is in a sense of reflection of the fact that art can't be measured, and it can't be standardized, and the fact of the matter that these kinds of conditions, that is the absence of a viable test program, because of the absence of standards and because of the conception of the proper function of the arts in education, has served to reinforce the current minor position of the role of the arts in secondary education and in the colleges. In addition, in a study that was done by Lawrence Downey a couple of years ago dealing with the tasks of American education, he asked well over 5,000 people throughout the country on a stratified sampling basis to rank order a number of tasks for elementary and secondary education, in terms of if the budget had to be cut should come first and what should come last. Well, there were sixteen such tasks, sixteen such subject matters or areas that people ranked. Out of the sixteen, aesthetic education was ranked 14th by non-educators and 12th by educators, and in no case did it break into the upper half of the list, although it did rise somewhat with increased education.

Mr. Tumin: What came off worse than aesthetic education?

Mr. Eisner: I don't remember.

Mr. Villemain: That's true. There is evidence of this lack of concern in the professional literature, I think Professor Harris would support me in this, both found in educational philosophy and in educational psychology. I don't think the literature of educational psychology displays a great interest in the psychology of the aesthetic experience and what can go on here. It has been, as with educational philosophy, largely preoccupied with the learning that goes on in connection with cognitive enterprises and certainly this is true in educational philosophy -- it has only been within the last few years really that educational philosophers have been at all preoccupied with the nature of the aesthetic experience and its place in the hegemony of education generally. But this interest is growing rapidly in both areas.

Mr. Harris: The point was made very clearly that it can't be measured, that we haven't established criteria; and educational psychology for sixty years now has been preoccupied with measurement, as we were discussing the other day.

Mr. Tumin: Professor Harris, wasn't the same dispair felt about the unmeasureability, let us say, of literary appreciation twenty years ago and isn't it a fact that they decided to try to measure it -- doesn't that finally begin to produce results? Another thing, there is an ultimate unmeasureability to the things we are interested in.

Mr. Rosenberg: It has produced very bad results.

Mr. Tumin: We can make progress as being as bad as all the others.

Mr. Taylor: But I think that there is another reason -- this isn't the only -- and I think you have got to take the responsibility for it. But if I were asked by my University whether we should give academic credit for the programs coming from most high schools, I would say no.

Mr. Tumin: How about programs in history coming from most high schools? Wouldn't you be a little bit dubious about those, too?

Mr. Taylor: That's out of my area.

Mr. Beittel: Gentlemen, we have some little uncertainty here -- and yet I know that at the end of Dale's paper he spoke for uncertainty as we try to get status and resolve our lack of clarity. I know when Al talked to us too, he say it as an important ingredient in the history of art, and also maybe in the complex types of learning such as we deal with here. Could you speak to that for a moment, Dale?

Mr. Harris: Well, I was just referring to the fact that it had been increasingly evident recently that too direct a leading from fact to fact in linear programming, for example, may lead to learning but it also leads to satiety very, very quickly, and if you build in some complexity and make the individual search a bit, such as by other types of programming, so-called branching types, the interest is held and in the long run the individual stays with the material and learns it perhaps more effectively.

Mr. Beittel: This isn't against measurement, this is just one of the conditions with which we must contend, you're saying. Well, Gentlemen, I'm afraid our time is coming to an end. This is not the last supper - you have a chance again tomorrow to ceremonially talk to the whole group.

Mr. Tumin: When is the crucifixion to occur?

Mr. Beittel: The crucifixion will not occur until after you go, I understand.

Mr. Rosenberg: Crucified in absentia!

Mr. Beittel: This concludes, then, the interaction session of the outside specialists who represent disciplines we feel of moment to the interdisciplinary field of art education, A.D. 1965. Thank you, Gentlemen.

METHODOLOGICAL INQUIRY AND EDUCATIONAL RESEARCH

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The fact that the term "methodological inquiry" and the term "educational research" do not designate clearly defined and integrated contexts of inquiry suggests a caution about their juxtaposition in the title of this paper. As currently employed, the term "methodology" may mean a particular mode of procedure, a collection of methods, or it may mean a systematic investigation into the formal properties of all methodized operations. Similarly, the terms "educational research" may be taken to mean a miscellany of conclusions, problems and generalizations which are the consequence of assorted types of investigation, or "educational research" may be taken to mean a variety of research techniques and investigative methods used in connection with the problems of a very important human institution. The fact that these terms do not denote precisely delimited areas of study would permit the thought that the two fields overlap at times and are identical at still other times. Also tolerated would be the view that "Methodological Inquiry into Methodological Inquiry" is a less tenuous title for the present paper. At the outset the door should not be closed to the thought that the relation between the terms "methodology" and "educational theory" is one of synonymy.

The problem of effecting competently structured research and explanation in education is part of the broader problem of effecting such research and explanation throughout the domain of the human sciences. This problem can be extended to include the natural or physical sciences as well. But without supporting or implying a view to the effect that the social or human sciences proceed in accordance with logical methods and structures unlike in kind those found in the physical sciences, one can distinguish with sufficient clarity a cluster of problems as a warrant for the label "methodological problems of the human sciences."[1] Further, such a label need not presuppose that the task, if there be one, is to bring to the human sciences the concepts, terminology and techniques which help to distinguish the problems of the physical or natural sciences.

I. The Common Sense - Precise Distinction in Inquiry

One of the features that significantly distinguishes contemporary inquiries in philosophy, the human sciences, and educational theory is the preoccupation with language and its role in human affairs. Such interest is not peculiar to our own age. It has manifested itself in inquiries since antiquity. But a distinctive feature of contemporary analyses is the examination of language as a major category for structuring problems of, and inquiries into, such other domains as morals, human nature, mind, art and the nature of the pedagogical situation. Identifying conditions of linguistic adequacy for inquiries into, for example, the source and validation of norms for life and education, the relation between knowledge and sense perception, aesthetic subject matters and the structure of language itself has become a focal preoccupation. Implicitly affirmed, if not militantly declared, is the notion that such investigations can yield a harvest of solutions to problems of life and education. Effecting adequately structured research into education is one of these problems. Providing clearer delineation of subject matters for methodological investigations is another of these problems. An assumption of the present paper is that some current and widespread understandings of signs and language in inquiry should be taken sufficiently into account.

One important distinction to be made is between the ordinary, everyday or common sense, and the precise, critical or exact use of language. With common sense expressions we are said to be using language in its most elementary form. Terms and ways of juxtaposing terms are learned "uncritically" from experience. The terms, and statements made up of the terms, are not taken as objects of reflection to be composed in conformity with norms appropriate to the contexts in which they occur or which stand as the expressions themselves. Put another way, common sense terms and the way in which they enter discourse have not been gained, nor do they enter, through formal or disciplined procedures. We learn many things "without having to go to school to learn them." One does not need to be an expert to talk to others. Many if not most of the terms, categories, phrases and statements we have in our vocabularies and are prepared to use have not been challenged either by us or by those with whom we share them.

On the other hand, precise, critical or exact language provides expressions whose constitutent terms and meanings have been established in consequence of an inquiry or challenge. Propositions about usage have been formulated. Terms are employed in accordance with stipulated usage. The language of experts, of the several natural and physical sciences, of logic and mathematics, and of the specializations that are exploding into contemporary life - all these languages have developed in consequence of reflection, discipline and inquiry. With common sense the terms and expressions are often vague: The boundaries of the area of applicability lack specification. With common sense the terms and expressions are often ambiguous: We have different meanings, definitions and interpretations but we do not have specifications as to the particular meaning, definition or interpretation intended. With common sense some expressions when juxtaposed with other expressions provide instances of contradiction. Both sets of statements, "Out of sight out of mind," "Absence makes the heart grow fonder," and "It's never too late to learn," "You can't teach an old dog new tricks," issue from common sense or ordinary discourse. Indeed, the very act of distinguishing the vague from the not-vague, the ambiguous from the unambiguous, and the contradictories from the compatibles is an act of other than common sense judgment. With precise language the terms and expressions are assessed at the hands of an inquiry oriented to appropriate norms and to the task of eliminating vague, ambiguous and contradictory expressions.

The distinction between common sense and precise language may be illustrated by the physician who consults the results of a blood test with his technical assistant. He is engaged in relatively precise discourse when discussing such matters as glucose and hemoglobin. With less exact but nevertheless still precise discourse the physician may share the conversation with his patient. But the patient who prefers this particular physician because he is treated as a "patient" but as a "human being" or "person" will be involved not only as a recipient of some fairly technical generalizations. He will be involved as a partner in common sense exchanges. The consultation may contain not only precisely formulated medical expressions but also ordinary and everyday expressions as well. Blood is discussed. But dicussed also is the weather, mutual summer vaction plans, and clothing.

Other illustrations are to be found in such cases as a group of individuals attending a lecture on research, or a group of students in a class on linear algebra. To follow the thought, raise and answer questions, and accept or reject conclusions, is to be engaged in rather technical or precise discourse - whether verbally or silently executed. But after the lecture, or when a bell releases the students from the class, common sense may take over and everything from naughty jokes to recent vacation trips enters for attention and discourse. There is the not altogether unlikely illustration of the two boys, one of whom majors in psychiatry and the other of whom majors in political science, who return home for the Thanksgiving holidays. If the family is to continue as a valued enterprise, and if the Thanksgiving dinner is to be a shared value, then the two boys will not challenge or elaborate upon the discoursing of the father, mother, younger sister, or each other out of the framework and with the distinctions of each's precise language. Indeed, many if not most of life's prized possessions - most deeply valued inter-personal relations - are built upon and sustained by common sense or everday discourse.

But the appearance, growth and expansion of such professions as medicine, law, military science, space technology, and of such disciplines as physics, astronomy, biology and anthropology is testimony to the fact that common sense discourse is inadequate to the tasks of achieving reliable knowledge and effective control for the human condition. Philosophy appeared as an alternative way of establishing judgments of value. It appeared as a process of reflective inquiry - as a process for the "examined life." Astronomy appeared as an alternative way of fixing belief about the character and movement of planets. Organized education emerged as an alternative to chance, accident and caprice in the nurture of the young. Men have domonstrated continuously that they are unwilling to leave the formulation and solution of what can be construed as crucial problems of life to the uncritical processes of ordinary experience. Again, to reject common sense usage from such fields as law, medicine, astronomy, philosophy and education is not to reject it altogether from the human situation. But this condition together with the distinction between common sense and precise discourse, is made within a configuration of language attempting to be precise.

II. Common Sense as a Methodological Problem of the Human Sciences and Education

One often cited condition of the human sciences is the lack of general laws or explanatory hypotheses in accordance with which inquiries proceed and in support of which empirical data and particular descriptions are logically determinate. Missing is an agreed upon or commonly understood conception of the object of these inquiries whose formulation is sufficiently precise for the employment of the hypothetico-deductive method. Such labels as "imprecise," "emerging," and "less precise" are widely employed upon the human sciences and education by inquirers inside and outside these fields. In the human domain knowledge has not expanded, nor does it enjoy cognitive security where we have it, to an extent even approaching the expansion and firmness of knowledge in the "more exact" sciences. Such is claimed to be the case in spite of the fact that inquiries into the human domain have been conducted over a period of at least as many years as inquiries into natural and physical phenomena.

The reasons advanced for the state of affairs in the human sciences and in educational theory are many and far reaching to say the least. Prominent among them is the absence of a systematic conception of the subject matter of the human sciences - the human. Of immediate significance to the present inquiry, however, is the notion that common sense discourse and notions populate the human sciences and educational research to a far greater extent than is the case with the natural or physical sciences. Empirical data and propositions, when introduced as relevant to a given investigation, are for the most part illustrative or anecdotal in character - at best everyday or ordinarily understood, rather than logically determined or deduced, examples. There is an old logical rule to the effect that from conventional categories no classes or distinctions follow. In the absence of a systematic, commonly understood, and controlling conception of the human as an object of investigation for scientific research, the divisions, distinctions and "variables" must be secured in another way. Adaptations of common sense distinctions provide one route as might be illustrated in the following:

> Psychiatrists and personality psychologist have focused attention on the sequences of development through which the individual moves as he passes from early childhood to mature adulthood. As the individual's anatomical and physiological system grows and matures and as he encounters the demands and expectations of the society in which he lives, he is faced with a series of developmental challenges which he commonly tries to meet. In the first two years of life, for example, he is expected to gain control over his physical body so that he can walk, talk, eat, use the toilet, and the like. In

adolescence, he is confronted with the challenge of achieving an autonomous self, independent from close parental controls. Although there are some variations in the list of developmental tasks prepared by different researchers, the concept is quite generally used in the personality field. Its significance for educational research lies in its relation to the motivation and direction of attention of students in schools and colleges. A high school girl preoccupied with the developmental task of relating effectively to age mates of the opposite sex may devote her major energies and attention to this task while failing to engage productively in the educational activities planned by the school. A college freshman who is encountering difficulty in achieving independence from the family may throw his major efforts into college activities which are controlled by students to gain independent recognition. The educational research worker is often required to build a model which makes explicit the several driving purposes of students and the various arenas of life in which these purposes may be worked out. Then the educational program can be understood in this perspective.[2]

The terms "walk," "talk," "eat," "use the toilet," together with such other terms as "opposite sex" and "activities planned by the school" are common sense terms while the terms "anatomical and physiological system," "motivation," and "model" are precise in character. Because of the juxtaposition of common sense and technical terms one is unable to determine, for example, what is and what is not included in the class of objects "developmental tasks" is defined to include. Suggested is that the term "developmental tasks" refers (a) to a series of "developmental challenges" or "sequences" through which individuals "move" and, (b) to a "concept quite generally used in the personality field," and, possibly or probably, a fruitful concept with which to build a "model" in educational research. To focus on (b) and avoid teleological confusions (a) is to direct attention to the question: "Has the concept of developmental tasks been so framed that it permits the location of classes of tasks?" To the extent activities of the sort indicated by "walk," "talk," and "eat" - all common sense terms - are pressed into relevance, to this extent lists of developmental tasks prepared by different researchers will vary. Models, here construed as methodic devices, which make "explicit the several driving purposes of students" will vary accordingly. They will be made up of descriptive statements - particular propositions - whose logical connections and, hence, whose status as logical classes, are indeterminate.

Then too, such terms as "the individual," "students," and "family" are common sensical. Adaptations of such use for discourse which attempts to be precise hinders the effort to gain precision. One is unable to determine, for example, what is and what is not included in the class of objects or attributes the term "individual" is defined to include. Is the "anatomical and physiological system" to be considered a part of the individual or apart from the individual? To say that the individual's leg is a part of the individual is to make a common sense statement with which there can be little quarrel. To say that the individual can gain control over his leg in order to walk is also to make a common sense statement with which there can be no difficulty. But to put the two statements together is to have two individuals, one of which includes leg and the other of which excludes leg. To apply the first sense of individual to the second use of "individual" is to say that a part of the individual must gain control over another part of the individual. To apply the second sense of the individual to the first use of "individual" is to say that the leg is not a part of the individual but one object, leg, in relation to which another object, the individual, can act.

Other illustrations of problems raised by common sense discourse in human inquiries are to be found in attempts to list "attributes" components or aspects of such phenomena as "creativity," "culture" and "personality" attempt to represent. Common practice has it that first one constructs a general concept or definition in connection with which classes or "aspects" are logically indeterminate, and second one lists under the general concept or definition a group of "aspects" whose illustrative relevance is common sensically understood but whose logical character and relevance cannot be established. Thus, one may bring in as aspects any set of terms ordinarily understood in human interchange. Such aspects would not stand in logical relation one to another in conformity with stipulations of meaning for the major term - "creativity," "culture," or "personality," for example - that is, the term which is alleged to designate what it is in connection with which these are aspects. Some mode of listing, numbering or charting the aspects must be introduced. Distinctions are made by lists, numbers, commas and by the common sense use of "and " For example, "creativity" may be defined as having, among other aspects, "the ability to think abstractly" and "the ability to solve problems." No rule is broken in such juxtaposition or in such a conjugate relationship of "aspects." One can find illustrations on the one hand in situations involving work in higher mathematics and, on the other hand, in situations involving problems of the broken home. And the sense in which the ability to think abstractly is not the ability to solve problems, or the ability to solve problems is not, among other things, the ability to think abstractly, is a matter that poses no problems. No rules are broken precisely because such distinctions follow from no rules.

"Behavior" is another category whose employment is extremely widespread but whose cognitive security can be raised to serious question. A definition of the term that would permit us to locate and distinguish an arena of applicability has yet to be fashioned. It is a vague term. The second stage of a rocket is said to behave in an extraordinary way when it "tumbles." Hair behaves and misbehaves. Diving boards, steering mechanisms, and children are said to behave in different ways. Then too, behavior is associated with a "school" of psychology in the same sense as "democratic" is associated with a party in politics, and it also is used to indicate a methodological orientation in psychology - an orientation to the empirical procedures of scientific inquiry. If used to designate the object of concern for the human sciences and for educational research then the term "behavior" will have to be defined to help us distinquish the object of the term "human" from the object of the term "non-human" in such a way that classes, aspects or kinds of distinctively human phenomena can systematically be determined. Further, we must be clear what more is being said with the term "human behavior" than what is being said with the term "human."

In the absence of systematic theory, included in which are critically formulated definitions of the major terms distinguishing the human sciences from other sciences, a hypothetico-deductive "type" of explanation distinctive to the human sciences and educational research has yet to be achieved to the satisfaction of those concerned in and with these endeavors. Explanations of the genetic, statistical or some other probabilistic type enjoy singular prominence. Such methods or techniques of investigation lend themselves to "ordering" or "connecting" the particular terms, "phenomena," and/or propositions presently viewed as the subject matter of human research. Thus, in seeking to determine "causal conditions" to creativity in art, for example, one may set in relation such categories as (a) the age of prominent artists, (b) the political inclinations of artists, (c) the socio-economic background of artists, and (d) peculiar emotional-attitudinal traits of prominent artists, and then proceed with the investigation. Since these terms or categories do not follow from a precisely formulated and operational definition of "artist," in its turn implied by a comprehensive theory of the human, then they are not admissible as structural items for hypothetico-deductive explanations.

It is true, of course, that probabilistic explanations, insofar as they presuppose statistical generalizations, are deductive. But because these generalizations do not contain such major categories and terms as are at work in the human field, however precise they may or may not be, they do not logically imply or entail conclusions that contain these categories and terms. Thus, the explanatory arguments themselves are to be considered "inductive" in character.[3] Relations between such categories and terms as age, political inclination, socio-economic status, emotional character, other than those entailed by statistical rules, are common sensical and therefore inappropriate to explaining the causes and consequences of human phenomena. We may expect to locate categories, descriptions, "variables" and data of far greater significance than those now found in research when we have developed a structure of systematic theory of human phenomena, and of controlled inquiry into that phenomena. And to the extent we operate at the common sense level with respect to our objects of concern, and we rely upon statistical or probabilistic types of explanations alone, we will be unable to work with the sort of abstractions and theorizings that would distinquish our distinctive discourse as something other than a kind of sophisticated common sense. Preoccupations with laws and techniques of statistical inference, and neglect of the problem of building systematic theory distinctive to the human domain, plays a major role in keeping the human sciences and educational research outside the confines of disciplined professions.

III. Signs, Definitions, Referents and Meanings

To examine further how adaptation without redefinition of distinctions made in everyday discourse is at least partially responsible for the state of the human sciences is to run certain risks. Prominent among these is the danger of becoming so lost in the intricacies of language that its role in structuring and solving significant human problems goes by the board. But this danger can be avoided if the examination is conducted with a view to the fact that the study of language explicitly for the purpose of effecting more adequate inquiries into the subject matter of the human sciences is the study of a phenomenon, language, which is a distinctively human trait. The study of language, together with the studying, must be included in the phenomena studied.

1. To say that an object, event, mark or things is a sign is to say that it stands for, represents, takes the place of, or is associated with another object, event, mark or thing. There must be something which is to function as a sign, and there must be something for which the something is to stand as a sign. Thus, in precise and ordered discourse, terms are employed not for their "musical" character but as components of statements which are about something. Some terms are less abstract than others: What the term "pin" refers to can be determined more quickly than what the term "personality" or "liberty" refers to. But one major distinction between precise and common sense discourse is to be found in the fact that the former moves in accordance with the distinction between a sign and its referent.

2. To say that an object, event, mark or thing is a sign, and by this mean that it stands for another object, event, mark or thing, is to provide a third property which establishes the Sign-Referent relationship. This third property is treated rather widely as the definition. In empirical or scientific procedures the terms making up the definition function not as synonyms so much as statements explicitly establishing the Sign-Object (or Sign-Referent) relationship. Thus a definition, as a third property of terms which are precisely meaningful, permits the identification of what other than the term the term represents or stands for. And what the term stands for must be a something that is to some extent distinguishable from something else. To the extent, for example, that such terms as "behavior," "personality," "culture," "art," and "creativity" meet this minimal condition, then to that extent their use moves away from common sense.

Still, to "experience" the terms, to share terms or "noises" with others, to be familiar with or influenced by terms is not necessarily to be moving with the triadic conditions of linguistic adequacy. From the conclusion that the term "freedom" is one with which we are familiar while the term "Wappashatti" is one with which we are not familiar it does not follow that the former meets the minimal conditions of critical meaningfulness.

3. To provide the third property, the definition, is not necessarily to provide the referent. To claim a referent, or simply to offer a synonym, is insufficient to the task of establishing a referent. Thus in critical discourse we may have referents to which definitions direct us, and we may have definitions which contain claims for a referent but which do not direct us to something other than the term being defined and to something other than the definition itself.

Sign

"man"

Definition or Interpretant

"an aluminum common pin weighing 200 pounds."

Referent or Object

(given the time, energy and facilities one could provide an "it" capable of being put on a scale and registering 200 pounds)

Sign

"Wappashatti"

Definition or Interpretant

"little blue devils in the blood stream. Can't see them, touch them or distinguish them. They are intangible but nevertheless there in the bloodstream.

Referent or Object

(by definition there is no distinguishable, locatable, discernible, or experienceable object. However, one is claimed in the Interpretant)

But an interpretant for the term "Wappashatti" may be so fashioned as to provide a referent. Making it a synonym for another term widely understood to meet the triadic conditions in one way. Having it refer to a picture or to something picturable is another way. Hence:

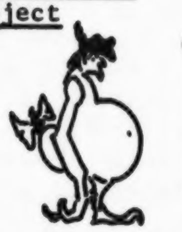
Sign

"Wappashatti"

Definition or Interpretant

"little blue devils is displayed in pictorial or other plastic form with long arms, pot, beret, short legs, tail, and so on . . ."

Referent or Object



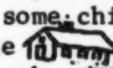
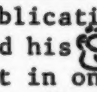
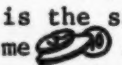
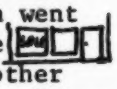
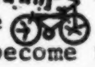
(by definition a distinguishable object or referent - a picture or sculpture - as also could be the referent for such a term as "unicorn.")

Still, with respect to the first definition of "Wappashatti" the picture located by the second definition is not claimed to be in the bloodstream. The sign is the same in each case. But the state of definition and referent is different in each case.

4. Terms may refer to other terms. Discourse may be among other things about discourse. That is to say, language may represent linguistic objects - have linguistic referents. The terms "definition," "noun," "Communist Manifesto," "St. Thomas" five proofs for the existence of God," "the Ten Commandments," and "John Dewey's theory of art," may all be interpreted or defined in such a way as to permit the location of sets of terms, statements and arguments standing as referents or objects. A proposition in calculus is defined to represent theorems. The word "word" refers among other things to the word "word." An example of the distinguishably different sorts of referents may be found in the assignment: "Students, for next time you will bring your pens and pencils and, before class you will hand in at least three paragraphs of the Lincoln-Douglas debate." If the students are to provide the referents they will appear in class the next time holding a sheet upon which some statements have been written - the linguistic object or referent - and they will carry somewhere on their persons the object of the term "pen" or "pencil" - an other than linguistic object or interpretant.

5. Anything "under the sun" and other than a term or unit of discourse may function as a sign interpreted to stand for or represent anything else under the sun and other than a term. Thus, what is called a cloud may be defined or interpreted to represent what other than the term "rain" the term "rain" represents. The definition in this case might take on the form, "in a few moments and at this place there will be rain." The sign and the referent are other than linguistic objects. A stop-light at an intersection has been defined in an Operators' Handbook with such terms as, "means coming to a full stop before crossing the pedestrian right-of-way, the line painted or otherwise placed at the stopping point or . . ." Further, an object - word or other - may be defined or interpreted to stand for or represent something other than itself but included in which it may be found as a component. Thus, a regimental flag may be defined to stand for the regiment included in which the flag is a component. A black armband may be defined to represent a state of affairs in the life of the wearer. The term "I" or "me" refers among other things to the terms "I" or "me." A terrain model or a map function in the same way. ". . . in spite of the 'similarity' between the structure of the map and the area it represents, the map can serve as a representation of the area only if certain rules of interpretation are used."[4]

Language may refer to objects which include language but more than language. "Happy Birthday" may be written on the cake. The terms "library," and "curriculum" refer to, besides language, other matters. The terms "human," "John," "culture," "group," and "army" refer among other things to language. Terms distinguishing professions function in the same capacity.

6. Anything under the sun and other than a term or unity of discourse may be defined to stand for or represent terms. Thus, in an A B C book a picture of an apple may appear on the upper part of the page while below it and on the same page is the term "apple." (the mother or other reader provides the interpretant usually by pointing which, when taken over into the thought of the child becomes in effect, "the word placed below or near the picture is the referent of the picture.") On the backs of some food packages and in some children's publications there is the same that runs like this: "John went into the  and asked his  for some  so that he could go back to the  and buy the  ." What in one situation is the referent for a term may in another situation become the sign. Thus, one in confronting an abstract painting may ask, "What does it represent," and expect a state of affairs similar to the one present in the A B C book years ago where something formed with line, color, texture and plane is taken to stand for or represent a term of statement. If the signals of the football huddle, of the catcher-to-pitcher gesture, or of the sort abroad when a girl places an apple on the window sill to direct a gentleman caller to proceed in a certain manner - if all these refer to directives which themselves take on linguistic form, then we have cases of linguistic objects or referents of non-linguistic signs or representations.

7. Different signs or linguistic objects may refer to the same thing - have the same referent. Consequently we are able to "translate" one language into another - for example, French into English - and, oftentimes, we are able to mediate conflict at the "verbal level" by determining that at the "level" of referent there is no conflict. Thus two individuals may be arguing about "adjustment" and "maladjustment" when a probe into their respective definitions yields a conclusion to the effect that what one is prizing as adjustment and disvaluing as maladjustment, the other is prizing as maladjustment and disvaluing as adjustment. The terms "Benthamite Utilitarianism" and "Jamesian Pragmatism" might, upon analysis of use, be found to refer broadly to the same doctrine. "What for you is red is for me blue" is often taken to mean, commonsensically, that where you see something you label," "I see something different and, accordingly, use the label "blue." Alternative, and upon analysis, what might be said is that both individuals have or see the same phenomenon but use different terms as the signs.

8. The same term may be defined or interpreted to stand for or represent different things. Thus the term "pin" will have a different referent depending upon which interpretant among the following one would choose: "what one will find at a bowling alley," "diaper, fraternity, common or safety . . .," in wrestling to put and hold the opponent to canvas in the following manner . . .," "striking element in rifle, pistol or similar

percussion weapons, activating a charge or detonator . . .," "metal or wood belaying peg to be passed through and held in place in a rigging arrangement that . . ." The statement, "We say we have a democracy and they say they have a democracy," is a statement which may, upon analysis, provide the conclusion that the terms used respectively by a representative of British or American interests and Soviet interests may be the same but may have entirely different referents.

Sophisticated examples of similar terms with different referents are to be found in cases where the interpretants or definitions are supplied the same term but from different fields of study. As examples, one could say, (a) a table is a perceived phenomenon - an object of sensory experience, and (b) a table is a dance of electromagnetic charges, or (c) a table is an object of art criticism - interior or furniture design particularly.

One could speak in a similar fashion about Mr. X: (a) Mr. X is a perceived phenomenon - an object of common sense discourse; (b) Mr. X is a peculiar case in the dentist's files; (c) Mr. X is a particular case in the 201 files (U. S. Army Officer credentials usually on file in Washington, D. C.); (d) Mr. X is of a particular physic-bio-anatomical description; and (e) Mr. X is a introverted personality-type with abilities in abstract thinking and quick adjustment to emergency situations. Both the terms "table" and "Mr. X" remain the same in the illustrations, but the definitions or interpretants differ and therefore direct the terms to have different referents.

The fact that the same term may have different definitions and hence different referents provides the condition for ambiguity or equivocation. Here, as in the case where different terms may have the same referent, some conflicts and problems upon analysis are not conflicts or problems at all. The following is a case in point:

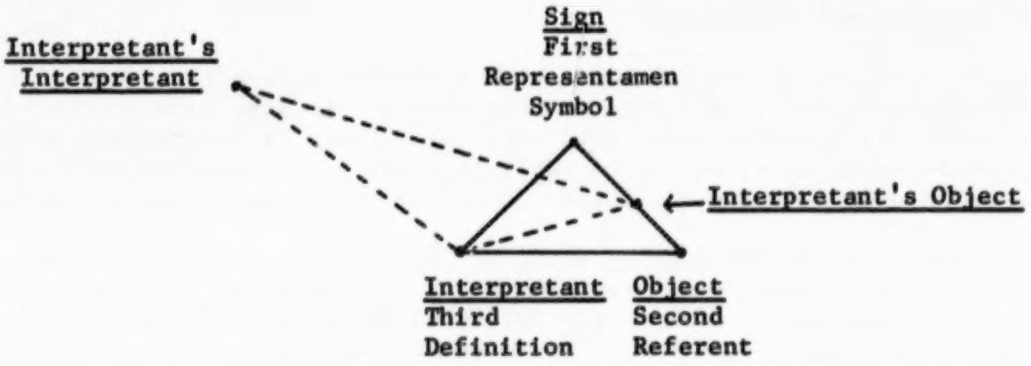
> . . .Eddington contrasts the "common-sense table" with a "scientific table," and implies that because the former is "solid" while the latter is "mostly emptiness" the common-sense and the scientific views are in incongruous. But the expressions "solid" and "mostly emptiness" are defined or specified in just those contexts in which it is appropriate to predicate the former of tables and not the latter. If critical tests show that a given table is solid, the analysis of the table into a structure of electrons is valid only if that structure exhibits the property in question; and for that structure of electrons the characterization "mostly emptiness" has no assigned meaning. It is therefore difficult to escape the conviction that the foundations of Eddington's philosophy of science consist of outrageous puns.[5]

The immediately foregoing quotation, however, presupposes matters not yet developed in the present inquiry. And while all presuppositions cannot explicitly be set forth in any inquiry, the assumption implicit in the foregoing account of Eddington's philosophy of science - that common sense and precise meanings of terms together cannot willy nilly be incorporated into a given descriptive statement - bears directly upon the present inquiry and therefore must be made explicit.

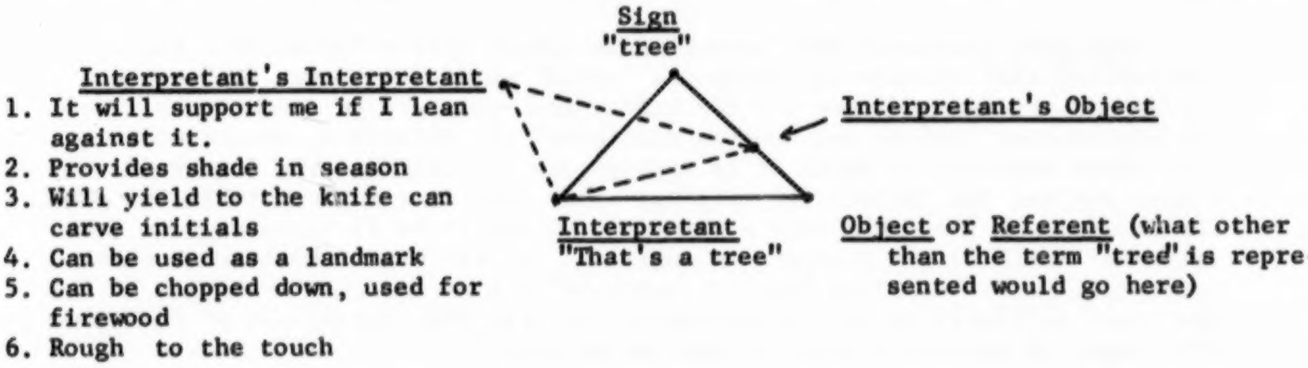
9. The meaning of a sign, from the operational or pragmatic viewpoint, is to be found in the "conceivable consequence" of the sign. The logical or literal meaning, as a condition for shared inquiry, has been set forth by one of America's most inventive and distinguished logicians:[6]

> A Sign or Representamen is a First which stands in such a genuine triadic relation to a Second, called its Object, as to be capable of determining a Third, called its Interpretant, to assume the same triadic relation to its Object in which it stands itself to the same Object . . . the Interpretant or Third . . . must stand in such a relation to it (the Object) as the Representamen does . . . the Third must indeed stand in such a relation, and thus must be capable of determining a Third of its own; but besides that, it must have a second triadic relation in which the Representamen, or rather the relation thereof to its object shall be its own (the Third's) Object, and must be capable of determining a Third to this relation. All this must be equally true of the Third's Thirds and so on endlessly.

The meaning of the term is not the term. It doesn't mean itself. The meaning is not the object, although the meaning of a term may become the object of another term. The meaning is to be found in the interpretant, the interpretant's interpretant, and the interpretant of that interpretant. This may be diagramed as follows:


Sign
First
Representamen
Symbol
Interpretant's Interpretant
Interpretant's Object
Interpretant
Third
Definition
Object
Second
Referent

And it may be illustrated as follows:[7] A boy asked his father, "What is a tree?" His father can reply, "It's a term - a noise you have just made. What you really want to know is what other than the term 'tree' does the term 'tree' represent." But the father is not a logician and so proceeds to direct the boy to a tree in a field nearby. He points, and without intending to convey the notion of sign-object identity, he says, "That's a tree," rather than, "'Tree' is a term we use to stand for that," (pointing). "That's a tree" now permits further interpretants:


Sign
"tree"
Interpretant's Interpretant
Interpretant's Object
Interpretant
"That's a tree"
Object or Referent (what other than the term "tree" is represented would go here)

1. It will support me if I lean against it.
2. Provides shade in season
3. Will yield to the knife can carve initials
4. Can be used as a landmark
5. Can be chopped down, used for firewood
6. Rough to the touch

The meanings 1 through 6 with such other meanings as (7) It loses its leaves in the Fall, (8) Mustn't get under it during a thunder or lightning storm, (9) It can have something to do with the making of paper, and on and on "endlessly" throughout the life of the boy and the life of his heirs, these meanings would be classified as "common sense meanings" as distinguished from those interpretants and interpretants of interpretants as might be established in botanical discourse or in that discourse which would establish the term "tree" to stand for "mostly nothing" - a dance of electromagnetic charges. Meanings are affairs of common sense and precise structure or contexts.

Some have argued that the statement is the "ultimate" unit of meaning. Others have argued that "in taking the statement as the unit of meaning we have drawn our grid too finely. The unit of empirical significance is the whole of science."[8] Still others would distinguish clusters of statements into two "universes of discourse": the "normative and the descriptive." The present study has been moving with the distinction "common sense and precise" discourse. There are other proposals for "carving up" the language terrain.

The issue can be dramatized with the following statement: Learning is the manifestation of the emotional strain between the orbit of Mars and the gold-holdings of England and France during any given fiscal year as they are caused by the mutation of genes in the Declaration of Independence.

The terms "gold-holdings" gain meaning in a configuration of terms distinguishably different from another configuration of terms in which the terms "orbit of Mars" gain meaning. One gains its precise definition and interpretants in the language of economics while the other gains its precise status in the language of astronomy. Each term is used in accordance with the norms of a "structure" of terms and the above statement ignores the distinctions between and the norms of such structures. Put another way,

> . . . We are led to investigate rules of usage, to make explicit the criteria employed by those who use the symbol in applying it, and to explore the logical implications which that symbol has within the framework of the system of symbols to which it belongs.[9]

Still, the norms or criteria for establishing the "framework of the system of symbols" to which a specific symbol "belongs" have not been established to the satisfaction of those who engage in linguistic investigations. How this problem is resolved will have profound implications for the object of social and educational research and for the entire field of linguistic analysis. But of immediate interest is the fact that the solution of the problem, for purposes of facilitating the present inquiry, must account for, and to some extent justify, the present inquiry as a "framework of the system of symbols" to which such specific symbols and signs as those we now consider "belong."

The present paper falls within the domain of inquiry, and presumably is an example of a system of meanings or a universe of discourse, suggested by the title: "Methodological Inquiry and Educational Research." Hence, distinctions made among language "kinds" or "classes" will be in accordance with general categories peculiar to methodology, and not peculiar to, for example, biology, psychology or astronomy.

Methodological discourse is distinguished among other ways by the language it uses. This language is constituted of such terms as "means," "ends," "method," "sign," "referent," "interpretant," "control," "procedure," "directive," "form," and "mediation." The generalizations about signs (1 through 9 above) are procedural in character. They set forth considerations to be taken into account when *ordering* signs and symbols into something that can be called "critical discourse" or "precise language." The generalizations have been conditioned in a major way by the methodological state of affairs in educational research and in the human sciences. Thus, language is here treated as an object of methodological (rather than lexicographic or grammatic) interest. Language is treated as *method*. "Carving up" the language terrain will proceed with methodological adequacy as language is distinguished into cases of method, means and ends. Categories for the task are already available. But it will be important to bear in mind that while such categories as *means*, *ends*, and *methods* permit us to distinguish language into classifiable kinds - universe of discourse - our very attempt is itself within a "system," kind or universe of discourse. In short, our inquiry is a part of its own subject matter. Methodology classifies, examines and makes procedural proposals to methodology as well as to other universes of discourse.

For an activity to be methodic - a case of method - and therefore subject to methodological scrutiny it is necessary that that activity be shaped or directed by regulative agencies or devices. Methodic activity is not circumstantial or incidental, but deliberate, patterned, formed or ordered. Language, if it is at all relevant, enters as that which is to be formed, patterned, or ordered, *and as that which is doing the forming, patterning or ordering*. Hence, the laws of logic or the "directions" for filling out an income tax form are cases of language in accordance with which one proceeds to select, reject and compose terms. A cook book, *The American Red Cross First Aid Textbook*, a driver's handbook, on the other hand, are made up of directions which provide a consequence the character of which is other than language. The rule of multiplication in arithmetic is a set of symbols functioning as a norm for instituting relations among symbols. The cake recipe - directions for making a chocolate cake - is a set of symbols which, when followed, yields a state of affairs other than symbols. To ask someone for of statistical inference and the various "directions for wounds and their care," though at different levels of abstraction, are instances of methodized operations: They are proposals for method.

When language functions as method one can distinguish signs or symbols that take the place of the temporal consequence or future state of affairs. The term "chocolate cake" represents or takes the place of the future. It is the end, purpose or goal. To say, for example, "My purpose is to make a chocolate cake," is to have a sign, "chocolate cake," as the referent for the term "My purpose," The "is" makes the connection. And the referent for the term "chocolate cake" is another matter, (one which can be eaten).

When language functions as method one can distinguish symbols that take the place of components or relate - matters which are to be manipulated or "done unto." The terms "½ cup shortening," "1 teaspoon vanilla," "2 squares of chocolate melted over hot water," "shallow pan," and "shortening" represent or take the place of other matters and are turned to when one begins to marshall the resources. To say, "I need vanilla and two 9" shallow pans," is to have a sign "vanilla" as a referent for the term "need" (herein interpreted as *means*). The referent for the term "vanilla" is another matter.

When language functions as method one can distinguish formal characteristics by examining the way in which the terms are composed or related. Negatively put, one can put up a chocolate cake recipe into clippings, *each of which contains only one of the terms of the recipe*. Then one may proceed (a) by gathering the clippings into one's hand, (b) tossing them into the air, and (c) pasting them down where and in the way they land. By following "these" directions - *this method* - one will lose the *other method* and, along with it, the other means and ends.

To put the matter differently, the term "method" represents a composed group of symbols in its turn capable of being differentiated and ordered under the terms (or categories) "means," "ends," and "methods." If we eliminate the terms constituting ends, and we eliminate the terms constituting means, then we eliminate method. If we eliminate means we eliminate ends and method. If we eliminate ends we eliminate means and method. Eliminate any one corner of the following triangle, Figure 1, and you eliminate the other two corners.

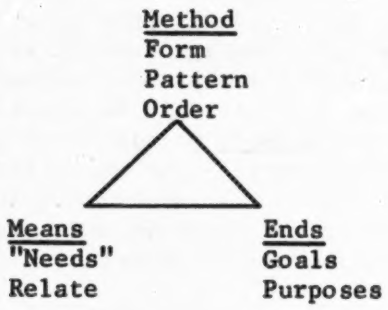


Figure 1

Further refinement in locating the subject matter of methodological inquiry is now possible: Method, means and ends are linguistic distinctions or categories of methodology and serve, with the help or other methodological formulations, to delineate an arena of applicability or a "system of meaning." This arena or system is made up of substantive or particular instances of means-ends-methods. Terms making up "means," and terms making up "ends," may refer either to language (as in methodological discourse), or they may refer to non-language (as in cooking or first aid discourse). In both cases method, means and ends appear as language. And methodology itself appears among the substantive instances of its own arena of applicability.

A diagram of the field of methodology is also possible if we account for: (a) the traditional and still cognitively firm distinction between descriptive or ethically neutral statements - the statements which locate what is, what has been, and what is possible - and the prescriptive, recommendational or normative statements - the statements which express judgments of should and should not, good and bad, or ought and ought not; (b) the notion already expressed that referents may be claimed in, though not located by, statements which are nevertheless critical as distinguished from common sensical; and (c) the distinction already at work in the present paper between common sense and precise language. Add to this the various "units" that go to make up the curriculum in institutions of higher education, and one can tentatively entertain the following "map" as something other than a common sense or ad hoc device:

Methodological Inquiry

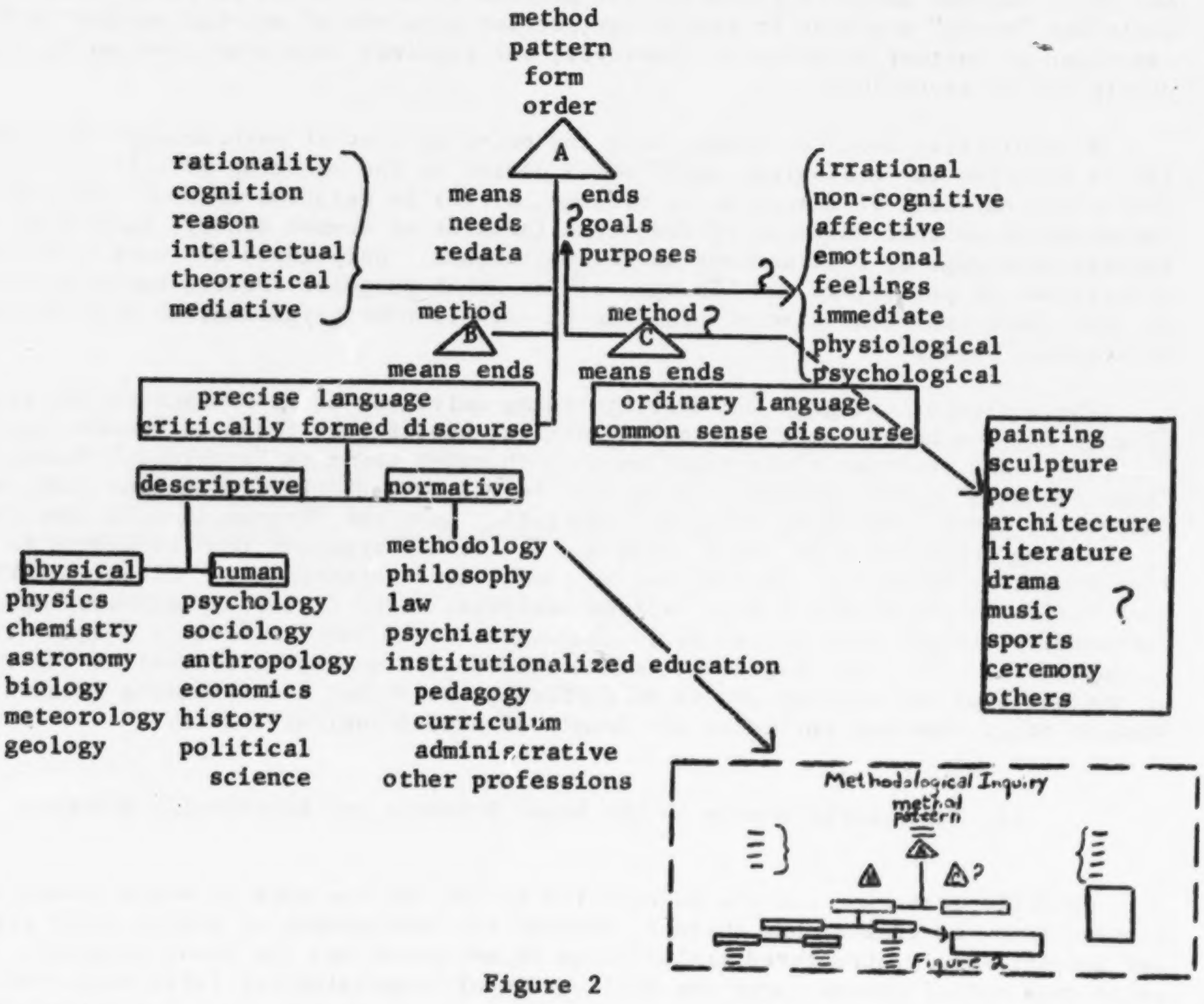

method
pattern
form
order
A
rationality
cognition
reason
intellectual
theoretical
mediative
means
needs
redata
ends
goals
purposes
?
?
irrational
non-cognitive
affective
emotional
feelings
immediate
physiological
psychological
method
B
means ends
method
C
?
means ends
precise language
critically formed discourse
ordinary language
common sense discourse
painting
sculpture
poetry
architecture
literature
drama
music
sports
ceremony
others
?
descriptive
normative
physical
human
physics
chemistry
astronomy
biology
meteorology
geology
psychology
sociology
anthropology
economics
history
political science
methodology
philosophy
law
psychiatry
institutionalized education
pedagogy
curriculum
administrative
other professions
Methodological Inquiry
method
pattern
Figure 2

Figure 2

The diagram (Figure 2) has been designed in such a way as to permit the problem of the methodological status for such areas as are designated by the terms "painting," "sculpture," "music," "architecture," and "drama." The relevance of the problem is suggested, although not adequately developed, in the following:

> The method of a poet, however difficult, it may be to formulate, is (partially) articulated whenever other methods reveal its traits. It is articulated by its own products, and by any other products that reflect its influence. The imitation of the method by disciplines or by parodists articulates it no less than direct verbal criticism or direct "examination."10

But whether or not there is method in the arts is a matter for later treatment. Suffice it to say here that the door is open to the problem of determining or identifying methodological properties in non-cognitive domains.

All categories, whether listed under the normative or under the descriptive disciplines, or under the human or physical sciences, in the diagram (Figure 2) permit the location of means, ends and methods. That is to say, psychology is a case of means, ends and methods. So, too, is biology. Philosophy, history and law are also so understood. A "psychological problem" from the point of view of methodology is to be found within psychological discourse, or within some other discourse asserting problems for psychological discourse. Another sense of psychological problem is indicated in those affairs of education where the place of psychology in the curriculum is in question. And still another sense of psychological problem is to be found in those instances where a student "needs" a course in psychology, or for purposes of solving another problem expressed in another universe of discourse, one requires knowledge provided by the discipline of psychology.

A "biological need" or means, from the point of view of methodology, is established (a) in relation to "biological ends" which center in the securing of reliable knowledge within the universe of discourse of biology, or (b) in relation to some other end, expressed in another universe of discourse (precise or common sense), qualifying biological knowledge or distinctions as relevant means. Only those who work with the disciplines of psychology and biology, or for other purposes require knowledge provided by these very important disciplines, can be said to have psychological problems and/or biological "needs."

The inclusive category for distinguishing universes of discourses in the diagram (Figure 2), and hence qualifying the adjectival use of such terms as "psychology," "biology," and "economics" in relation to such other terms as "problems," "needs," "requirements," and "purposes," is method, in its turn distinguished into ends, means, pattern or order. If there is to be elaboration upon the diagram it will take the form of locating other cases of means, ends and method and ordering them according to whether they appear as normative, descriptive or common sense enterprises. Plainly, further elaboration is required for more refined analyses. Such fields as symbolic logic and mathematics, though methodological in character, would have to be more adequately accounted for. But the diagram is here defended as a schematic account of the universe of discourse of methodology and is of sufficient precision for releasing inquiry into domains other than but including the domain of methodological inquiry.

IV. Linguistic Snares in the Human Sciences and Educational Research

Specific attention can now be directed to the various ways in which common sense distinctions, or adaptations thereof, prevent the achievement of sufficiently precise and scientifically structured explanations in education and the human sciences. Common sense does not of course carry the full burden of responsibility (also supported to be the case are metaphysical commitments and ontological assumptions - two matters which hardly contribute to the cause of science). Nor do the linguistic pitfalls afforded by common sense function in any causal way - save as they, perhaps, become objects of loyality in lieu of, or as replacements for, systematic inquiry. Alternatively, these linguistic snares are to be looked upon as conditions whose presence militates against or vitiates attempts to gain precision in scientific inquiries.

1. In common sense discourse the term "is" is not taken to set forth the sign-object distinction. It is not viewed as an interpretant. For the most part it permits a confusion between the sign or term and what is represented by that sign or term. It permits, further, the notion that the existence of the referent is guaranteed by the existence of "its" name. It allows, further, the assumption that the term or sign is like or in some sense isomorphic (or identical) with the referent - if it has one. The sign is offered not with the claim that there is a referent, as is often the case with critical

discourse within which the sign-object distinction is made, but it is offered as though it had a referent or as though it itself is the referent. The statement, "We haven't found the atom yet," confuses between the term "atom," which we do have, and the referent for that term which, in accordance with directions contained in interpretants and extended interpretants, can be instituted in laboratories in more than one country.

Similarly with the expression, "We haven't found creativity yet." In point of fact we have found, or invented it. "Creativity" is in widespread use. What one would want to say is either, "We have no referent for the term 'creativity.'" "Our definitions of 'creativity' thus far direct us to nothing about which we can speak and into which we can inquiry together," or "'creativity' is a term with which we attempt to identify, through its definition, a certain range of behaviors which are distinguished from another range of behaviors."

The confusion between sign and object permits the thought that with language we "carve up" or "dissect" an object such as a painting or a classroom situation. That the object of attention standing as a referent for linguistic expression can be "artifically chopped up" or segmented by that language is a peculiar adaptation of common sense discourse. Max Black calls attention to this snare as follows:

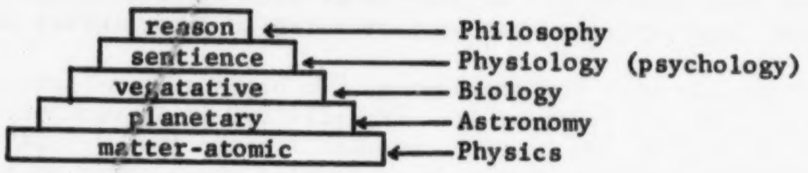
> To dissect a frog is to destroy it, but talk about the rainbow leaves it unchanged . . . . (there is) the muddled notion that the function of speech is to reinstate reality. Well, the best recipe for apple pie can't be eaten - but it would be odd to regard that as an inadequacy.[11]

He goes on to identify the "linguist's fallacy."

> From the contention one cannot speak grammatically without using a particular grammar, it is a far cry to the assumption that to speak grammatically is to mold "reality" into a structure isomorphic with grammar.[12]

The assumption of isomorphic relations - relations of identity between sign and object - leads further to the confusion of inquiry name. Thus the referent for the term, "emotion" (if there be one) is presumed to be identical or isomorphic with the term "psychology" or "psychological." The artist who writes his family, "I cannot paint any more for economic reasons," either (a) is confusing the term "money" with the term "economics," the former standing among the referents of the latter, (b) is presuming an isomorphic relationship to obtain between the term "economic" and the referent for the term "money" - a little like replacing the term "penny" with the term "money" and then replacing that term with the term "economics," or (c) that his objectives have shifted such that he is now pursuing economic investigation, taking classes in economics, or otherwise working with or within the universe of discourse of economics. Alternatively, and yet to be treated in the present inquiry, is the notion that what is located and described by the language of economics is a necessary condition for the artist to proceed in an activity located and described by another universe of discourse. Such a condition, described with the terminology of economics, is absent. But here an account of necessary and sufficient conditions is in order and will shortly be accounted for. But suffice it to say here, the artist in his common sense expression might be saying that something other than "language" is causally related to his not painting. That this might be the case does not depend upon the artist's use of language. But what the artist says the state of affairs is does depend upon his use of language. There is nothing linguistic about what he finds missing. But if he were pursuing a logical problem there might be something linguistic missing.

Further examples of distinctions which are adaptations of common sense discourse the "is" of identity -- are to be found: There is the confusion between the structure of compound propositions joining in conjugate form signs which represent universes of discourse, and the referents of symbols which go to make up these universes of discourse. This, too, is an example of isomorphic presupposition. A traditional example is to be found in those metaphysical doctrines which presuppose a "reality" which is partitioned in the manner in which we can classify either different universes of discourse or different blocks of universes of discourse. Thus, the rather flippant label "librarian's theory of reality" has been attached to the doctrine of "levels of reality" each of which stage is labeled with a sign for a universe of discourse. Hence:



In the human sciences and in education research this practice finds expression in attempts to speak of "personality" in terms of, for example, "its physical and social environment." Upon analysis of these terms, the only "environment" capable of being partitioned in accordance with ways in which we classify blocks of sciences or knowledge (into "physical" and "social") is the library, the curriculum or other endeavors in which the task of grouping inquiries is to be found. Again, "physical" and "social" are devices for classifying inquiries, or groups of cognitive disciplines. What are alleged to be the "physiological, psychological and intellectual advantages" of the "gifted" over the "retarded," the "chemical, physical and emotional aspects of a work of art," and "the biological drives of the organism" turn out upon inspection to be the result of the confusion between sign and object -- the technique by means of which one can adapt common sense distinctions for use in educational research and the human sciences.

A reflection upon the diagram (Figure 2) will clarify the confusion between levels of generalization or abstraction in the statement to the effect that "there is psychological and logical approaches to classroom teaching." Both orders of discourse, the normative and descriptive, fall under the rubic of logic. To say "logical and psychological" is equivalent to saying either (a) logical and anthropological, logical and geological, in the fashion of saying "the people of Michigan and the people of Detroit," or, "apples and fruit," or (b) two universes of discourse each of which is logical and each of which is a logical approach to classroom teaching. In (b) one would be teaching or studying classroom teaching out of the universes of discourse of logic and psychology. However, common sense adaptations found in such expressions as "there is both logical and psychological meaning of statements" hardly lend themselves to the distinctions of the sort presently being developed.

The rather popular practice of assuming that the individual, child or adult is partitioned in the same manner in which we can catalogue the various sciences cannot be supported either by a single science or by a collection of sciences. The diagram (Figure 2) is such a partitioning: And mention has already been made of the fact that books, libraries, curriculums and conceptualizing can be so partitioned. But to use the terms "psychological," "biological," or "physiological" to qualify something other than knowledge, knowledge gaining, or objects located and described by terminology distinguishing the various universes of discourse is to raise an extremely important question: "Within what science or universe of discourse can this claim be substantiated?" 2. Pitfalls traced to isomorphic assumptions or the "is" of identity can be joined by another which finds the term or phrase not so much confused with its referent, but assumed to be something "behind" or "manifested in" the referent. Reification (or hypostatization) is the usual label for this practice. For example, the term "atom" is looked upon neither as a sign nor referent whose location is specified in elaborate interpretants, but rather as a mysterious phenomena or "agent" behind the referent its turn a manifestation of the phenomenon. Another illustration is to be found in the practice of saying that the "creative instinct" drives some artists and scientists -- rather than saying "creative instinct" is a concept or explanatory device helping to explain among other things the activities of some artists and scientists.

A very forceful use of reification is to be found in those sociological and anthropological circles which take the sign or symbol "culture" and read it behind the referent it is interpreted to have, and then assign "it" causal status in the nonscientific doctrine of "cultural determinism." Professor Nagel deals with the problem as follows:

> . . . although the term "French Enlightenment" is an undeniably useful one, it is also a term that is highly vague and whose extension cannot be articulated with unlimited detail. This inability to "spell out" in full and with precision the extension of the term is perhaps why some students have conceived the French Enlightenment to be some sort of "unitary whole," and have endowed this "superorganic individual" with powers to direct the course of individual human action. But however this may be, such a hypostatic transformation of a complex system of relations between individual human beings into a self-subsisting entity capable of exercising casual influence is the analogue of vitalistic doctrines of biology, and is a recurrent theme in the history of social thought.[13]

To ratify is to say that Newton discovered gravity rather than to say that "gravity" is a concept purporting to explain among other things the phenomenon of falling bodies. Freudian categories, the sign "whole child," "authentic self," "general will," "psyche," "ego," "gifted," and a host of others are ratified into causal or other "forces" behind events they, as signs, might be taken to represent. There is in the literature the notion that the several sciences study different "aspects" of a "whole" yet to be located by and, indeed, which is sometimes said to "defy analysis." "The minute you begin to analyze it, the whole escapes you," is not an uncommon way the expression goes. One could claim, in sympathy to one historical tradition in philosophy, that all children have "whole-ness" but that most adults have lost it. Presumably, those adults who have not lost "it" are those best able to discern whether or not the whole child is being educated, or whether the wholeness of the child is being maintained. The problem would remain, however, as one of determining which adults have it. And the problem can be avoided if acknowledged is the notion that with the conception of "wholeness" goes an attempt to locate or fashion a comprehensive conception of the human. Remaining would be the problem of determining the method and the universe of discourse within which the investigation is to proceed.

One interesting sidelight on reification is that the description offered for the reified agent or agency purports also to stipulate what can and what can not be described scientifically - what can and what cannot be researched. The claim that we have scientific truth and non-scientific or other-than-scientific truth proceeds out of a method other than the method of science. Thus we have a non-scientific description of science and where it can and cannot go. Consequently, descriptions in support of reified forces, instincts or agencies are themselves exempt from scientific evaluation. And since evidence cannot in principle be located or specified as refuting or confirming claims to reified agencies, the descriptions, whether in theological or social-scientific language, cannot be tested.

3. Another snare that issues from a reliance upon common sense discourse is exhibited in the statement: Learning is the manifestation of the emotional strain between the orbit of Mars and the gold holdings of England and France during any given fiscal year as they are caused by the mutation of genes in the Declaration of Independence. Here employed are terms such as "orbit of Mars" which gain their interpretants and extended meanings in a configuration of language other than the one which the term "mutation of genes" receiving stipulated meaning. One can conclude that here we have a confusion between universes of discourse. But more particularly the pitfall is one in which the terms having stipulated usage in a particular universe of discourse are employed in another universe of discourse with the tacit assumption that the precision still holds. In short, there is *generic* confusion. A favorite practice in human inquiries is to take the terms which have much precision in the physical and mechanical sciences, and employ these terms in contexts where their precise status no longer holds *as though such precision does still hold*. To ask for the *sum of an infinite series* is to ask an unanswerable question. "Sum" is defined in relation to meanings surrounding among others the term "finite." "Sum" must be redefined in order that the question becomes intelligible. Similarily, the statement, "The whole is more than the sum of its parts," displays a term "more than" along with the term "sum" yet whose use suggests a meaning other than the term "sum." Something other than scientific explanation is gained in the human domain when, possible for the purpose of scientific respectability, the terms "mental"

and "hygiene" are compounded in the title of a book. An attempt to describe a temper tantrum or a work of art with the terms -- rather than the method -- of physical and mechanical science, "pressure," "mechanism," "adjustment mechanism," "energy" and "release of energy," yields what in some circles is called "pseudo science." The statements themselves sound and look -- have the music of -- science; but upon inspection they evaporate into common sense and metaphor.

Nor is the widespread distinction between psychological and logical meaning at all rescued by changing the terms to "emotional" and "logical" meaning. "Emotional" gains its meaning in one universe of discourse. Logic gains its meaning in another. If there is meaning other than logical, than a term which is responsible to what psychology attempts to describe but responsible also to what aesthetics, art criticism, art history, anthropology and sociology attempt to describe is required. Psychological categories simply are not defined to include these classes of objects nor common characteristics of such objects. That the term "emotional" is critically employed in psychology is of course the case. But to shift its employment and use the term to describe or represent properties of subject matters described in other universes of discourse is to commit the generic fallacy. That is, to use the term, for example, "emotion" in some other field with the tacit assumption that whatever cognitive security it enjoys in psychology (or physiology) it enjoys also in that field, be it logic, history of art or political science is to explain a way rather than to explain a wide range of human phenomena.

This is not to say that one must not employ in one inquiry the terms receiving definition in another inquiry. The notion that a term can have multiple definitions and therefore multiple referents has already received attention. But these multiple definitions themselves are framed in and help distinguish the various universes of discourse. All of the uses of the term "tension" do not rush into relevance when the term is employed systematically in a particular universe of discourse -- save perhaps in the discourses of etymology, philology, or lexicography -- or others calculated to "collect" meanings. The terms "cool blue" in the language of the painter or art critic do not include (a) a daub of blue substance with a thermometer in it, (b) a musical piece that is "real cool," (c) a thin and somewhat transparent garment--shirt or dress or whatever, (although, of course, a painter may say, "Boy! Isn't that cool blue cool shirt real cool?"). Cold and warm are to weather forecasting what they are not to other activities, and unless the employment of these terms is accompanied by minimal stipulations of use then a generic confusion -- fallacy -- is at work vitiating the effort to gain firm conclusions.

Other generic confusions are to be found in such expressions as "intelligence is the interaction of the organism with its environment," "the force of personality," "the acceleration of social change," "the weight of an idea," "crooked (or straight) thinking," "ability to absorb ideas," and "the human has his animal as well as intellectual dimensions." Such generic liberties as these and other expressions exhibit are based either on common sense usage, or on the curious assumption to the effect that we become scientific to the extent we take the terminology of the successful sciences into our own discourse in an attempt to describe what scientifically these terms have not been defined to describe. This is but another way of saving that at least some of the theorizing in the human sciences and in educational research sounds scientific without being scientific -- hence the charge of pseudo science.

4. The fallacy of reductionism is committed when one provides a description of something that must be present in order that something else be present and offers that description as a description of that something else. To conclude that, from the fact that John's anger can take place without John's painting but that John's painting goes on only when John is angry, that a description of the painting is a description of the anger (that is, either John's painting in a case of anger, or John's painting is an "expression" of anger) is to "reduce" one thing to another.

> There cannot be thought without a brain, but from this truth the identity of the two does not follow . . . To conclude from the fact that A may occur without B but that B occurs only in connection with A, that B is

> "nothing but" A (or that B as such is "illusory") is to commit what has come to be known as the reductive fallacy: B is "reduced" to A.[14]

Failure to move in accordance with the distinction between, on the one hand, *necessary and sufficient* conditions, and on the other hand, *attributes*, opens the way to reductionism. Being "emotionally upset" may be a necessary condition to John's painting. But it is not a sufficient condition if it can be shown that he paints also when not emotionally upset. The terms "emotionally upset" occur within and help us distinguish one universe of discourse. The term "Cubism" is interpreted in terms which help us distinguish another universe of discourse. To offer the former interpretant or definition (of "emotionally upset") as the interpretant or definition of the latter term, "Cubism," is to commit the reductionist fallacy.

A circumstance that must be present in order that another circumstance be present is what is meant by "necessary condition." This is not to be confused with the event (or with attributes of the event) in connection with which it *is* a necessary condition. A circumstance that, *when present*, occasions the presence of another circumstance is called a "sufficient condition" to that latter circumstance, and is not to be confused with the event (or with attributes of the event) in connection with which it is a sufficient condition. A circumstance that must be present in order that another circumstance be present, and which when present, occasions the presence of another circumstance is called a "necessary and sufficient condition" and is not to be confused with the event (or with attributes of the event) in connection with which it is a necessary and sufficient condition.

Put more technically: A condition *SX* is a sufficient condition of an event *Y* provided that whenever *SX* is present *Y* occurs. A condition *NX* is a necessary condition of event *Y* provided that *Y* cannot occur in the absence of *NX*, (*Y* may, however, occur in the absence of *SX*). A condition *NSX* is necessary and sufficient condition of an event *Y*, provided that (a) if *NX* then *Y* and, (b) if not *NSX* then not *Y*: (or if *SX* then *Y*. If *Y* then *NX* but not necessarily *SX*. And if (*NX* then *Y*) and (if not *NSX* then not *Y*) then *NSX*.))

Put less technically: "We might say that 'control' of an *unwanted* effect consists of knowledge of a *necessary* condition of that effect; while 'control' of a wanted effect consists of a *sufficient* condition of the effect."[15]

In the human sciences the reductionist fallacy is to be found in those attempts to subsume under symbols fashioned to locate and explain one class of objects (usually a necessary and/or sufficient condition for the presence of objects located and described by *another* set of symbols) another class of objects. Further, the reductionist statement may include (or be an object which includes) as an attribute or component, the reference for the symbols operating reductively: A description of a part may be offered as a description of the object of which it is a part.

Descriptions of necessary and sufficient conditions, and descriptions of attributes occur *within* the various universes of discourse. Biological, astronomical and meteorological explanations may be distinguished into such descriptions. Further, one universe of discourse, say geology, may be said to provide descriptions of necessary conditions for what it is that is located and described with the language of another universe of discourse, say history of art and art criticism. Hence, geological descriptions are necessary but not sufficient conditions for the presence of Gothic architecture in its turn located and described by another universe of discourse. In biology the term "human" is a *specie* of the *genus* "animalian." Thus one can speak of the human animal, the turtle animal or the elephant animal. To carry this *specie-genus* relationship over into psychology, methodology and/or educational theory and to proceed to describe what distinctively is the human animal to be educated with the language of biology or physiology (with some of the language of mechanics thrown in), is to practice at once the generic and reductionist fallacy. Within the discourse of the human sciences the term "human" and not the term "animal" is the inclusive category. The term "animal" appears in explanations (bio-physiological) of necessary but not sufficent conditions for what it is explanations in psychology, sociology, anthropology, educational theory and methodology attempt to locate under the rubic "human."

The problem for the human sciences and for educational research is to formulate a comprehensive and systematic theory of the subject matter for inquiry in logical connection with which (a) attributes can be distinguished from necessary and sufficient condition, and (b) necessary and sufficient conditions can be explicitly determined. Until this is done we cannot determine in discussions, for example, of art what is an attribute of the referent for the term (for art criticism, art education and art history, for example), and what are conditions to the occurrence of the referent for the term "art." In discussions of the human we in the human sciences and educational theory are unable to distinguish in a sufficiently systematic way skull type, emotional makeup, blood pressure, posture, brain, neurons, cells, oxygen (in the lungs), hair, femininity, masculinity, genital organs and feelings into terms whose definitions provide descriptions of necessary conditions, sufficient conditions or attributes. The distinction between *inner* and *outer* is a precise distinction occurring in the physical and natural sciences. But whether or not one can move with this distinction in discussing works of art, artists, children, intelligence, or broadly the human as an object of educational concern waits on an answer to the question: Within what universe of discourse and with what major categories do we distinguish the objects of attention for systematic inquiry into the human domain?

V. Human as a Methodological Category

From the methodological point of view the term "human" gains significance in three ways. In the first place the term and its definitions may be singled out from the various inquiries making use of it, and it may be assessed in terms of its methodological adequacy as a concept -- its role as an explanatory device -- whose formulation either does or does not facilitate the inquiries making use of the conception.

In the second place, linguistic formulations which occur in such contexts as educational research, pedagogy, curriculum, guidance, and administration, are based to a considerable extent upon the alledgedly warranted conclusions of psychology, sociology and anthropology -- more particularly, psychology. The significant point for methodology is that one somewhat common sensical and imprecise context of language ("schooling" or "pedagogical" language, for example) relies upon other somewhat imprecise universes of discourse. Methodological problems of either or any of these discourses are bound up with methodological problems of the others. In short, there is a general methodological problem of the human sciences.

In the third place, of rather dramatic import is the fact that the description of signs and symbols, and the prescriptions for them, are *as descriptions and prescriptions* human endeavors directed to something which itself is human. Language (something human) is about language (something human). Methodologically speaking, therefore, the diagram (Figure 2) enters *as part of the methodological interpretant of the term "human*." The diagram becomes in part a methodological description of the human. For a theory of language is, to some extent, a general theory of the human estate. Thus, if physics is a case of means, ends, and methods -- a case of language and hence human -- then a general theory of the human for the human sciences would have to account not only for physics but for the general theory itself as an attribute of the subject matter of the human sciences. Sociology and anthropology in studying, for example, American culture, would have to be studying among other things sociology, anthropology, physics and the methodized operations on Capitol Hill -- or at least presume them to be components of their subject matters. And since the human sciences are descriptive disciplines and subject to the evaluations of the normative disciplines of the methodology of the social or human sciences, then the latter stands in relation to the former in an educative way. Methodology of the human sciences is one with the phrase "education of the human sciences." And from here it is but a short step to the notion that methodological discourse in the broad reaches suggested by the diagram (Figure 2) is one with the discourse of professional education. Disciplined educational theory in its general phases is one with the universe of discourse of methodology. But this point has been developed elsewhere.[16]

VI. Methodological Inquiry into Aesthetic Subject Matters

Thus far advanced is the notion that methodology is a universe of discourse which is preoccupied with procedures and with principles of procedure. But procedures and principles of procedure are capable of being set forth in linguistic form. Formal properties of the forms are also capable of being set forth as signs. Arts affairs become relevant, therefore, if it can be demonstrated that such affairs are "rationally" conducted or ordered affairs - that is if they are procedural, purposeful or "rational." If ordered affairs then the arts are goal directed and mediative in character. They would, accordingly, display methodizing properties of a symbolic character. If so, then promised would be a set of principles of procedure which if followed would permit more effective control over aesthetic subject matters. To the extent that such principles could be made explicit, to that extent one could predict artistic ends -- obtain artistic knowledge. Principles of art would be possible and, if discovered or formulated, they presumably would be cognitive in character.

Two sets of difficulties have developed around this generally stated position. In the first place there are those difficulties which come with the notion that arts affairs are cognitive, logical, knowledge producing affairs and consequently subject to the canons of truth and falsity. Since, however, it is obviously the case that the laws of logic do not apply either to the pillars of the Parthenon or to a water color by Marin or Homer, then the following qualification is sometimes added: Aesthetic knowledge is non-conceptual knowledge, and artistic works are logical in a different sense than propositions are logical. Still, there are problems with this interpretation to which the following directs attention:

> The desire of so many lovers of the arts to exhibit the latter as possessing an important cognitive core is symptomatic of the supreme, though perhaps unwitting, value they place upon knowledge. But if that desire can be satisfied only by so radically altering the meaning of "cognitive" that in its new use the term has no recognizable continuity with its normal employment, has not the ideal of clarity been sacrificed, and has not a serious disservice been thereby rendered to that which is prized so highly?[17]
>
> . . . if there is no identifiable sense in which an art object can be "translated" into other media -- and I believe there is no such sense -- then the "knowledge" that is supposedly communicated by works of art is generally different from scientific knowledge. Accordingly, the use of a common label for both sort of things (whatever the sort of thing that art objects convey may be) seems to be but a species of punning, and is bound to create intellectual confusion.[18]

Here the reductionist charge is leveled at a rather high level of abstraction: It is applicable to these attempts to describe aesthetic subject matters with terms appropriately placed at "B" in Figure 2 and which are designed to distinguish the area of knowledge and cognition. Further, whether or not the matters described with such terms as "logical properties," "knowledge," "truth," and "cognition" are necessary or sufficient, conditions, or whether they are partial attributes of aesthetic subject matters is indeterminate in the absence of a systematic account of those subject matters.

Other inquirers have relegated the arts to the limbo of irrationality: And still others engage in the practice of "explaining" arts affairs in keeping with the latest fashions of intellectual history. And art in education is distinguished as something that cannot be taught but that can be appreciated. Eschewing interpretations of divine intervention one can mean simply that arts affairs, like sunset-type affairs, are just "there" but not in consequence of any order, planning, deliberate forming or control. Generic liberties are taken in the explanation to the effect that the art object is there in consequence of the "artist" -- a psycho-sociological category injected into methodological (or common sense) discourse. Others, in seeking to avoid this slip into reductionist terminology (reductionist because psychological categories help describe necessary conditions and not procedural or the lack of procedural matters having to do with artistic production) go about describing the affair as a consequence of accident, fortuitous circumstances or spontaneity. On this view there would be little for educators to do save to structure an environment, display some facts and materials whose relevance logically would be indeterminate, get out of the way, and watch hopefully for the artistic event.

Still other inquirers, agreeing that arts affairs are not methodic in character, have been unwilling to settle for a theory of arts affairs which cannot in principle be tested. A theory of art, in order to be acceptable to such a view, must be provable or refutable. One must be in a position to specify what the evidence would be that would support the theory. And one must be in a position to determine what the evidence would be that would refute the theory. If all is evidence for the theory, then nothing in particular is evidence for the theory. The theory should be so constructed that the conditions under which it can be tested must enter into the very construction.

Psychology looms large in importance for this last point of view. Sociology, history and anthropology would also enter as appropriate universes of discourse. However, it is not at all clear just where, or within what universes of discourse one would fashion a comprehensive theory of art -- an ethically neutral theory -- appropriate at once for psychology, history, sociology, and anthropology except the discourse helping to distinguish the methodology of the social sciences. It is one thing to argue that art is defined to refer to non-methodized affairs, that art falls outside the boundaries of methodological subject matters. But it is another thing to argue that this definition of art is methodologically adequate as a definition and therefore appropriate for inquiries into aesthetic subject matters. Whether historical, psychological, sociological, economic, chemical, anthropological or other universes of discourse locate and describe necessary and/or sufficient conditions or attributes of aesthetic subject matters still depends in considerable measure upon the methodological adequacy of the term "art" in its interpretants as proposed within and/or for these very important universes of discourse. Needed is a comprehensive definition of art for effective employment in the human sciences and, hopefully, in educational theory. The methodological issue centers in the character of the referent of the term, "art," and attempts to deal with this issue, insofar as such attempts aim at providing a systematic theory of art for the human sciences, must themselves be scientific. A theory of art framed in methodological discourse, or a theory of the proper employment of the term "art" in the several concerned sciences, must itself in principle be tested. Whatever the case, the account, whether it treats art as methodic or non-methodic - as a case of the emotion or as a case of intelligence - fall appropriately within the field of methodology of the human sciences. And this is no less a universe of discourse than the other sciences.

A second cluster of difficulties with the notion of a methodological approach or account of aesthetic subject matters comes from a rather substantial community among others made up of people who are and who have been closely identified with the arts. There are artists, art critics, and art historians, for example, who are challenged to defend the spontaneous, novel and creative aspects of artistic endeavors. These important and, for some, defining values are understood to be in jeopardy whenever methodological interests direct themselves to the arena of artistic production. Some have expressed alarm. Some other have been antagonistic: the term "scientifistic methodolatry" has been coined[19] for what is seen to be a case of the "bull in the china shop." Held is the view that methodological inquiries by their very nature and definition would place unnecessary restrictions upon an enterprise that must remain free. This is argued on the ground that a methodological investigation into a subject matter -- any subject matter -- presupposes the possibility that the subject matter can be distinguished into means, ends and control. Such a presupposition as this includes the notion that one can determine ahead of time what the aesthetic or artistic consequence will be. In the case of the artist it would be said that he knew beforehand what he was after. In the case of the art historian, he would be said to be in a position to predict what the future character of artistic phenomena would be. Aesthetic subject matters, insofar as they are not cognitive, are nevertheless orderable in accordance with forms or controls which themselves are cognitive. Art, which is not theory, would proceed in conformity with theoretical method. Control in art would be more of the character of a cake recipe than of a logical form, but cognitive form would be there.

The difficulty with the immediately foregoing centers in the claim that arts affairs are *arts* affairs precisely because they are not governed. The inventive, imaginative and spontaneous historically has characterized in part the growth of art forms. The outcome of arts affairs are not previsioned, predicted or set in advance. They are unlike not only the outcomes of other and similar endeavors (including a given artist's own prior efforts), but also those instances immediately antecedent as "stages" in the development of a specific work of art. Art, it is argued, is continually changing: Historically it is continually defining itself, (defining here taken to be "distinquishing"). It will continue to do so if attempts to put it in a methodological straight-jacket continue successfully to be resisted.

This rejection of methodological explanation, though variously and less common sensically expressed elsewhere, occurs as a case of ordered discourse, and therefore is subject to test and examination. Rejection of methodological attempt to explain aesthetic subject matters are themselves cases of method - ordered language. Recognized, of course, must be the fact that traditionally, too, and in widespread practice, is the definition of methodology as a discipline whose subject matter is exhausted in cognitive or "rational" affairs. Thus cautioned, one can ask what is the meaning of such phrases as "set in advance," "not set in advance," "does not know ahead of time," or "does know ahead of time." What does it mean to say that the artist either does or does not have an end-in-view -- that the artist has an end either set in advance or not set in advance?

We will consider two senses in which one can say that a goal is set in advance. The first will be referred to as *theoretical ends*. The second will be referred to as *qualitative ends*.

1. *Theoretical ends*: To have a goal, end or purpose is to have something that takes the place of the future -- a representation. Purposeful affairs, as we have argued,[20] are symbolic - sign - affairs -- cases where a non-present (the future) through its representatives operates in the present in a directive capacity. In the case of the cake recipe one has something to *follow*. One has something in accordance with which to proceed. When asked for his goal one might reply, "I'm going to make a chocolate cake." The term "chocolate cake" is a name for something not now present but to be gained in the future. *It is an end set in advance of its* (the referent) *occurrence*. Similarly, when asked for his goals in life one would perhaps answer with such expressions as, "I'm going to get married and build a family," "I'm going to college and be an engineer," "I'm going to see to it that the materialistic tendencies in this community are thoroughly checked -- if it takes me forever." To have a goal, to repeat, is to have a group of symbols - a gang of signs. To "know ahead of time" is to be in a position to formulate a statement of symbols making reference to something other than the statement itself and located in the future. To "know in advance" is to predict in the present.

For an artist to say, "Now to finish by Cubist canvas," is for the artist to have a purpose or goal -- in short, a future set in advance. He knows in advance in the sense that he has a set of representations purporting to take the place of the future. Putting it another way, it is intelligible to say that he has an end set in advance if by that we mean a set of signs. An end *not* set in advance (and "end" here used means "temporal paint" -- future) would be understood to mean not represented is discourse. A future, in this case, *is not functioning as an object of a sign*.

We can conclude that artists, like anyone else, may proceed in accordance with representations of the future -- that is, with goals. And we can conclude that artists, like anyone else, can end up with objects and events unlike or other than those represented in the form of the goal (the sign). Prior to a given activity one may not know -- that is, be in a position to make an assertion referring to -- what the finished object or event will be. It remains to note that (a) the end achieved is still unique and therefore in that sense *not* represented, (b) the end achieved does not emerge from the employment of the term "Cubism" as a forming agent in the art activity, and (c) an artist may start his work without a set of signs which attempt to represent in some general sense the character of the work to emerge.

2. Qualitative ends: On the other hand "set in advance" can be taken to mean something other than signs or language functioning in the capacity of control. A canvas, stone or warp may be such that what is already there (and not linguistic or representative in the sense of language) is a point of departure or reference for what is to come -- for what is to happen next. Thus, one can "finish" a canvas started, say, yesterday because what is presently exhibited on the canvas "sets in advance" what the character (if only the general or pervasive character) of the finished object will be. Thus, a clever man can finish an unfinished Cessane precisely because what is already there in some sense operates as a point of reference for continuing the work. The history of forgery in art supplies instances where only the "confessions" of the forger directs us to types of investigations (C-14 tests?) which "reveal" via other than the aesthetic object that a forgery has indeed taken place. The forged work, furthermore, may not be an "imitation" or attempted duplication of any one painting by the artist whose "work" is being forged -- only the signature on the work may be duplicated, and even that may vary "on purpose." So too in reconstruction: A classical statue whose head has been missing since antiquity may be reconstructed to include a head. The restorer has an end in the sense that he has a "style" of head in some sense qualified by the statue itself. He rejects, for example, certain kinds of heads including one perhaps from Nigerian wood carving. Something other than verbal or linguistic representation qualifies, directs or significantly conditions the selection and rejection that is going on.

An end "not set in advance" would be intelligible in this second sense if we understood it to mean the total absence of partially finished, destroyed, begun or lost art objects -- or the total absence of "styles," "schools," or movements. One does not finish the Parthenon by adding steel girders, stainless steel casements and a large picture window over a carport. One "goes by" what is already there as a result of the work of some artist of antiquity. Here indicated is the notion that something other than language functions in a regulative capacity even though the specific and unique character of the emergent is not being forecast.

In those cases where there is nothing to go by the term art or artist is inapplicable. We can say "artist" before an empty canvas on common sense or some other grounds - biographical or "case history."

An end or goal set in advance would be intelligible in this second sense if we understood it to mean that there is something antecedently there and perhaps other than a sign but which can be (but may not be) represented in discourse this something is performing a normative role.

John Dewey's methodological inquiry into the arts have already paved the way for procedural accounts of artistic endeavors. He identifies himself with that rather substantial community of those who are convinced that the "stuff" upon which artists work cannot be duplicated or exhibited in symbols "verbal and mathematical" but that discourse may "point out the qualities by means of which . . . quality is achieved."[21] But of central importance to the second sense of "set in advance" -- the qualitative sense -- is Dewey's statement, "The doing and making is artistic when the perceived result is of such a nature that its qualities as perceived have controlled the question of production."[22] Suggested, although not elaborated with sufficiently critical methodological distinctions, is the notion that quality operates as an end, as means and as control or method. Asserted is the notion that an end may be set in advance not only theoretically but also qualitatively.

But the term "quality" or "qualitative" is not without ambiguity. Historically it has taken on two main meanings: First, it has been taken to mean of a high order of goodness -- something of significant value or worth. This meaning is reflected in such expressions as, "This has real quality," or, "By stressing quantity in education do we not run the danger of sacrificing quality?"

Second, the term "quality" has been taken to mean an attribute or component of an object which in its turn is not a quality but a "being," "reality," "existent," or "metaphysical entity" located and described with different language. This meaning is reflected in such expressions as, "The table is to be understood in terms of primary and secondary qualities. The quality of hardness . . .," or "This sculpture by Epstein embodies the quality of youthful robustness." The "it" of which these are said to be qualities is defined to be something other than a quality.

Dewey suggests a third and alternative meaning -- a methodological meaning. A significant issue would be the notion that an activity is controlled by its qualitative outcome in a way other than being represented ahead of time by goal signs.

There is a way to "research" this matter. One can arrange photographs of "steps" in the production of an art object in the order in which the photographs were taken. This is and has been a rather widespread practice in publishing circles directed to the plastic or visual arts.[23] Figure 3 can serve us in a similar fashion. It will be useful if we remember that our language is to be distinguished as different from what is portrayed in Figure 3 and of use if it directs our attention to something else, not language, said to be directive in character.

Inspection of the terminal point, #6, of each series permits us to entertain the notion that what is there appears also to some extent in the antecedent moments of "photographic arrest." Each #6 has a character displayed also by #5, #4, #3 and so on. Thus one can argue with Dewey that the end "as perceived" also pervades the antecedent acts and as pervasive (rather than as a distinctive terminal point) has controlled the production. The artist has worked with qualitative "means" in each case. He has worked to a qualitative end in each case. And the quality pervading the activity -- what Dewey called "pervasive quality" -- is the control, the method or the form. Mediative or formal properties other than theoretical seem to be at work in (or as) art activity.

But this interpretation must still answer to the difficulties often cited by that community of concern which prises the unique and the novel in arts affairs.

> Take the finished painting; note its quality. Now suppose we have photographs of various stages of the work, taken at daily intervals, let us say, while the painter was working. None of these, of course has the specific quality of the finished painting. But Dewey says this quality did not exist until the painting was finished, it could only have been in the artist's mind. Does that mean that from the earliest stages of the painting, from the incept onward, the painter has definitely in mind some regional quality that he is trying to bring into existence on the canvas? It is conceivable that this is sometimes the case, but most of the experience of artists goes against it: it would be remarkable if the exact regional quality of the final painting were that plain to the painter from the start . . . there is no doubt that something like this does often happen. Sometimes, we can see in the earliest stages of a great work that the quality we value so highly in the finished product has begun to emerge. But this is not always the case, by any means. Sometimes the quality that appears most definitely at the start turns out not to be fruitful; the artist's attempt to intensify it leads to radical formal rearrangements that end by destroying the original quality and substituting a very different one.[24]

Two important points are to be made: First, the specific and particular end is not being cited as the control. The series displays a pervasive quality which may be distinguished from both the qualitative components being arranged and the specific object displayed in each photograph. And second, to say that C (Figure 3) might have "emerged" at about B-3 instead of B-4 is simply to say that the artist is reconstructing or shifting his "controls," a little like saying that a gesture of friendship may become a gesture of indifference or one of intimate affection. Indeed, the theory presently being developed seems more to be protecting the uniqueness and the non-theoretical character of artistic activity that those claims which put the end of the activity antecedently "in the mind" (hence represented) of the artist. If the end is present antecedently, the present argument goes, it is present in the antecedent stages of the work itself. Hence, no methodological difficulties are to be encountered thus far in the above quoted hesitations.

A test may be devised to clarify further the methodological character of the present claims. One can take Figure 4 to consist of the finished products of the series listed in Figure 3. Several testing operations are possible. First: the three illustrations may be given to numbers of people who are asked to place them in the series presented in Figure 3. These individuals would have to "go by" or "follow" what is common or pervasive in the series in order to carry this assignment out. The pervasive of common quality is functioning in a formal capacity. Each series displays, in other words, a formal - forming - property.

Second: An investigator might switch the illustrations of Figure 3 as follows: C-5 to A-4, A-4 to B-3, and B-3 to C-5. Again, individuals would have to be *guided by* or act in accordance with what pervades the remainder in order (a) *to distinguish the shifted items*, and (b) to place the shifted items in their proper places. The work "proper" in the testing instrument does not direct the placement any more than the word "Gothic" in architecture directs the forming of qualitative components. (a) and (b) can be secured by virtue of the presence of direct quality.

Third: An investigator can mix all steps in such a way that no sequence is discernible. He might then ask individuals taking the test to "sort out" those that "belong" to "go" together and then to place them in a developmental series. This test, as with the others, will be pursued successfully, if at all, because of formal properties which can be diagramed as follows:

Pervasive Quality

method
control
form

Component Quality	Total Quality
mean	end
relata	finished product
institutables	unique achievement

Of crucial importance to this account of aesthetic procedures in the fact that method and control in the arts are being distinguished from method and control in cognitive endeavors. The distinction is between theoretical control and qualitative control, and *not species of theoretical control*. *The terms of discourse can represent but not function in the capacity of method or control in qualitative mediations*. The terms may refer to but do not duplicate or exhibit artistic controls. Method in qualitative affairs must be "had" or "suffered" or discriminated in some direct way. If a painter says, "Now to finish my Cubist canvas," the term, again, does not direct the painting activity but directs the painter to a painting which exhibits "its own" control - that which we label with the term "Cubism." This label was forged *after* its referent and not before in the history of art. Thus, "Now to finish my Cubist canvas," is not a necessary condition to finishing a canvas capable of being labeled "Cubist." And the uniqueness of the finished products does not permit us to explain away, but is to be explained by the presence of pervasive quality and qualitative means. *It is distinguished as an end in its uniqueness*.

Pervasive quality authorities or establishes the relevance of components already available or invented on the spot. The fact that these or those *are* possible means is determined by pervasive quality. The specific end emerges from components which have been selected and composed, and it is other than any one or a collection of these means. The means may be selected from a wider group of qualitative means authorized as means

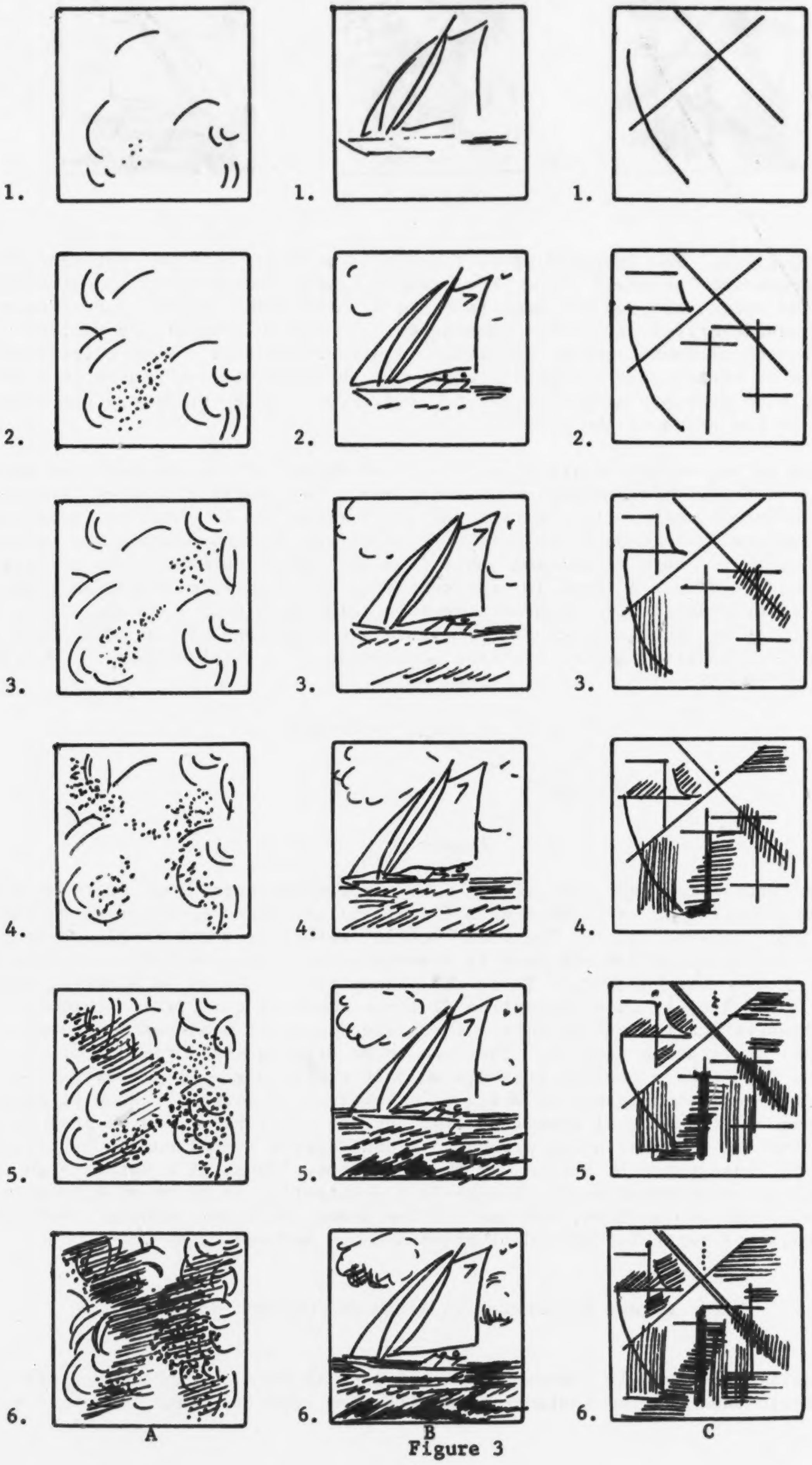

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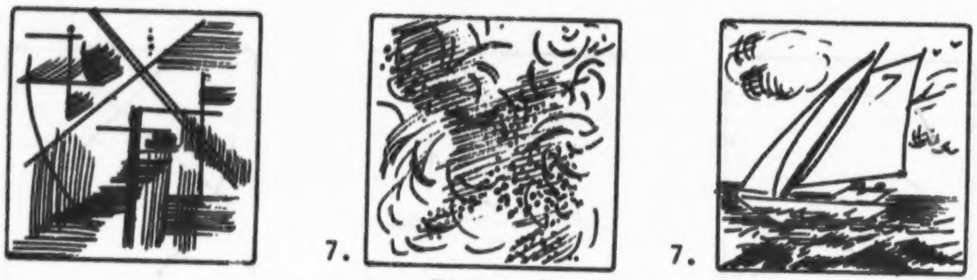
Figure 3



7. 7. 7.

Figure 4

by pervasive quality. The finished product exhibits a unique quality, yet also the quality of antecedent "stages." Thus, for example, a particular execution of a Gothic building may be unique and, at the same time, be without a Rose Window and without many possible method-authorized sculptural components. In the absence of any control (or style), and before an empty canvas, an artist is without control. When relationships are instituted on the canvas, discriminated in his surroundings, or placed in a sketch he may struggle to gain his method, means and his ends: He may produce a new form - a new proposal in the arena of the arts.

According to the methodological account out of which "set in advance" has been treated, qualities are discriminations of relations. The specific quality, the product of the discrimination, stands for or represents the relations in which it is presented. The representational relationship is a triadic relationship thus meeting the triadic conditions of symbol. But, as distinguished from theoretical symbols, the qualitative symbol presented stands as a third (a representative resultant) to itself in relation to a quality other than itself. Represented is a relationship of contrast. This is to say that qualities are constructed, discriminated, in relations of comparison and contrast. A specific quality is the resultant or product of a relationship of qualities, one of which is itself:

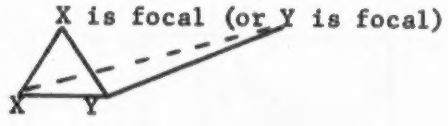


Figure 5

Qualities are constructed such that if the referent for the term "red" is to be a symbol (i.e. "focal") it must be located at X (Figure 5) and stand in relation to the referent of some "non-red" at Y. The term "Gothic" refers to a qualitative symbol, provided that the referent for the term is discriminated from some referent other than the referent of the term "Gothic." Thus, the conception of Pervasive Quality, Component Quality, and Total Quality is a conception of three kinds of qualitative symbols. There are Pervasive Qualitative Symbols. There are Component Qualitative Symbols. There are Total Qualitative Symbols. They are to be distinguished from theoretical symbols by the fact that a quality presents what it represents - it presents itself by representing the relationship out of which it emerges or by means of which it gains distinctiveness. A theoretical symbol or sign, on the other hand, can be present without at the same time its referent being present. A qualitative symbol cannot be present save as what is represented is present at the same time. Thus, at a rather high level of methodological generalization (C, Figure 2) a distinction is to be made between theoretical means, ends and methods, and qualitative means, ends and methods - between theoretical symbols and controls, and qualitative symbols and controls.

VII. Formal Properties in Aesthetic Subject Matters

Since qualitative symbols cannot be present save as what is represented also is present, it would seem that no instance of qualitative symbols, means, ends and method, can be present without at the same time taking the form of a specific instance of quality. Formal properties of qualitative mediations, insofar as they are qualitative symbols and do not take place of things other than themselves and excluding themselves, would be present only in substantive form. "Principles" of qualitative mediation or control, insofar as they are advanced methodologically are theoretical. They therefore cannot be principles of qualitative ordering. The function as assertions or propositions about "principles" which cannot enter but which can be represented by discourse. Qualitative principles are qualities. In sum, one cannot have a formal property of qualitative mediations without at the same time having a substantive instance of quality - just as one cannot have a qualitative symbol without having the relationship out of which it is a discrimination.

> Perhaps the most dramatic difference between aesthetic formal properties and those of cognition have to do with the relationships between form and its contents. The former can never be divorced from substantive matters. With the latter we can substitute variables or subject matter terms and thus obtain what we call "empty forms." (such as syllogistic form). This is not the case with aesthetic formal properties. They are only to be found and examined in connection with the content they order. They cannot be disassociated from their content because the relations and contents they represent literally sustain the forms.[25]

A theoretical or cognitive form may be presented without substantive content. But a qualitative form must be presented substantively: A qualitative symbol is to be found only as substantive qualities as are indicated with such terms as "Cubism," "Gothic," "anger," "circus," or "femininity" are found. These terms together with countless others refer to qualitative means, ends and methods. If other properties are to be found, they will also be substantively located.

The notion that formal or architectonic properties cannot be located save as substantive instances are located does not prevent us from going on to distinguish properties which recur or which are reinstitutable in qualitative affairs. For example, such terms as "Cubism," "Gothic," "femininity," "military combat situation," "circus," "waltz," and "swimming," help direct us to qualitative forms. But such terms as "contrast" or "qualitative symbol" help direct us to relations instituted in all of these forms: The terms with which we represent formal or architectonic properties in qualitative affairs are applicable to a far wider range of orderings than is the case with such other terms as "Cubism" and "femininity."

Two types of formal properties have been distinguished: One, Contradistinction, a case where the resultant, "Third" or "more than the relata (not-X and X in Figure 5) is the distinctiveness of one of the relata, (again, either not-X or X depending upon what is "taken" or discriminated as a quality); and two, Conjunction, a case where the "third" or "more than the relata" (not-X and X) is what is imparted to each of the components in relation from the relationship, the exhibited quality functioning as the symbol. Conjunction takes three forms: Individuation, Fusion, and Coordination. Again, each of these formal properties are to be found in substantive instances of quality. Each term refers to a case where two or more elements are related to gain a "more" or "Thirdness" - that is, to provide for the emergence of a qualitative identity not available save when a kind of relationship is instituted.

1. Contradistinction: A case of instituting a relationship for the purpose of establishing the qualitative uniqueness of one of the relata. In utterly nonsense language we might say, "If all were red there would be no red," "If all were night there would be no night," or "If all were femininity there would be no femininity." The quality we label "red" is gained in consequence of instituted or taken (thought) relations. To distinguish - institute - something as against, besides, alongside, on top of, in front of, behind, through, with or whatever something else - either in the "doing" or "beholding" sense of "to distinguish," is to proceed with the principle or contradistinction. Adequacy is to be found in the extent to which the choice or selection of joiners "thrusts forward" the quality distinguished or intended.

2. Conjunction: Differs from Contradistinction in that the "more" or "Thirdness" emerging from the relationship of two or more components is a quality imparted to the joiners or to the elements related. The two qualities are so related when they display what has been imparted to them in consequence of the relationship. Each component in relation has something happen to itself in consequence of the relationship. The resultant quality, the "Third" or "more" is that which is imparted to each of being related. Thus conceived, conjunction takes three forms. We refer to these as "Forms of Conjunction."

(a) Individuation: To be found in those instances when the unlike character of each of the components is heightened or thrust forward because of the relationship. The more or Third of a relationship instituted between a particular red and a particular green, for example, and yet common to them, is the "clash" or the "vibration." The red is not the clash. The green is not the clash. One clashes with the other. Apart from such a relationship and in other relationships neither the red nor green clashes. What we label "dissonance" is the Third of more resulting from relating particular kinds of instances of musical chords - particular intervals of a musical scale. And in the ancient practice, still with us, of positioning the mask of tragedy beside the mask of comedy, in the relationship of "fat" and "skinny," virtuous people and evil people, affluent communities and pockets of poverty, beauty and the beast, the form of individuation is at work as a control. Here the uniqueness of each is thrust forward at one and the same time to produce the Third which is the unlikeness of each - the clashing character of the relationship.

(b) Fusion: Obtained in those instances when the like character of each of the components is featured or thrust forward because of the relationship. The quality of a "group" emerges when elements are so related. This is an insight developed long ago among other areas in the area of the plastic arts: by "repetition a "pattern" is achieved. Fusion acts to impart to each joiner the commonness of the group thus making the components qualitatively alike. A company of soldiers marching, a church choir in costume, the hair of Venus and the waves behind Venus in Boticelli (two fusions in a painting), the role of columns of the Parthenon and the flutes of a column (two fusions in a building), the grid of graph paper, or the polka dot tie are among the many possible illustrative instances. What is called the Third of Fusion is not the property of one component nor, quantitatively in the sense of being another component more than the sum of all components. It is a property imparted to each in consequence of the elements in relation. The commonness at once is imparted and is the more or Third.

(c) Coordination: Obtained in those instances when the distinctiveness of each component is sought (approaching individuation), yet at the same time the commonness of each component is sought (approaching fusion). The focus is not the commonness entirely: Each component in being unique competes with others for attention. The focus is not the unlike character of the components: A commonality is achieved. Save in those instances where "unity" is taken to mean any pervasive quality or to mean some sort of a mystery, the form of coordination can be taken to mean "variety in unity." The variety is maintained, distinctiveness are provided, and a unity achieved, a commonness is also provided. But neither the commonness nor the uniqueness is featured. For example, a discussion group may have a commonness, yet alike costumes, hair-dos, voices and gestures are maintained. A shelf of books in a library, a grouping of furniture, silver, dishes or beach pebbles, a show of French Impressionism in a local gallery, or a set of bowling pins (fusion) carved in the likenesses of the last ten presidents of the United States are other cases in which the common and the uncommon character of the components are sought.

VIII. A Methodological Conception of Human for Education and the Human Sciences

With the development of a conception of qualitative symbol and control goes the task of revising the "map" of methodology exhibited as Figure 2. Question marks would be replaced by such terms as "Qualitative Symbol" and "Qualitative Control." Locating categories for distinguishing kinds or clusters of substantive controls becomes a problem for further inquiries and elaborations, (we do not know the relationship between controls indicated by such terms as "sex," "sports," "painting," "music," and "circus.")

But the achievement of a comprehensive theory of the human looms as a genuine possibility when we consider the fact that such terms as "personality," "culture," "mob," and "cultural pattern" refer to pervasive qualities components of which may be theoretical symbols. In other words, such terms as these may be said to refer to matters whose location depends upon conditions of contradistinction. The terms "metropolitan center," "introvert," "race riot," and "indignation" have referents only as a condition of contrast can be instituted - only as a discrimination is possible. So too with such terms as "pulse," "boiling point," "Mars," and "water." It may be suggested, although not yet demonstrated, that the qualitative symbol is the major methodological condition for an object to become a referent for the signs of scientific discourse. Whatever the case, a conception of the human for the human sciences and for educational research would have to account for the two symbolic functions herein outlined: And also to be accounted for is how such symbols are related in the referents for such terms as "culture," "group," and "personality."

Four relationships may be noted: First, Theoretical Predominence denotes those mediations which are primarily cognitive. The work of Dewey or of Einstein, the several sciences, such normative disciplines as philosophy, law, and educational theory are other examples. Theory is order to gain theory. This paper, the reading or writing of it, a child asking a question and receiving an answer, exchanges of letters, a panel discussion or lecture, are further cases. But with Theoretical Predominance quality is an inescapable "background." Theorizing cannot go on save in a qualitative setting, be it a room, laboratory, "collection of attitudes," "group mood," or in a civilization. Qualities are to be evaluated, in this case, in the extent to which they help forward the theorizing or the cognitive enterprise. At least, if not this, then qualities are to be assessed in the extent to which they do not "block the road to inquiry."

Second: Qualitative Predominance is a case where quality is ordered to gain a quality but where there is theory or cognition present in an instrumental or supporting capacity. Theoretical symbols are present in a race riot. Theoretical symbols are present as children count and chant while skipping rope or while bouncing balls. They are to be found in the work of the "caller" at the barn dance. Theoretical symbols of one qualified kind rather than another are pressed into service to help gain cynicism, apathy, levity, enthusiasm, friendliness, sorrow or a poetic form. Drama and most literature are here included. In these and other cases of Qualitative Predominance theoretical symbols are to be evaluated in the extent to which they help forward the qualitative means-ends abroad in the situation. At least if not this then signs are to be assessed in the extent to which they do not "get in the way of" the achievement of a qualitative state of affairs.

Third: Reciprocity is a case where both theory and quality function as means, ends and method. A bulletin board or advertisement may be a qualitative total yet contain theorizing in the form of announcements, descriptions of goods or event, or other "copy." The end is both the theory and the qualitative "vehicle" for that theory. A dinner conversation may involve those orderings of qualities we call "manners" and "informality," yet be constituted also of theorizing moving to conclusions of various sorts. "Group Process" or "The Workshop" way of learning are other illustrations. In such cases both theoretical and qualitative methods constitute the controls, the means and the ends.

Fourth: Qualitative Independence is to be found in those means, ends and methods which entail no theorizing. Painting, sculpture, music, the dance (without chit-chat), are included here. A temper tantrum, moment of affection, ripple of laughter in a classroom or an "aimless" whistling are other illustrations. Moments of intimacy in which words appear may find those words - words of endearment perhaps - qualitative components only. Indeed, in this latter connection one could find instances of "pseudo science" - terms of the mechanical sciences employed because of how they look and sound and not because of how they operate in precise discourse. But in Qualitative Predominance qualities operate as controls and with no theorizing about.

These four ways in which one may define the human are recommended as the proper interpretants for such terms as "personality," "culture," "group" or "audience," "artist," "scientist," "classroom situation," "curriculum," and any other terms used to locate the distinctively human as an object of descriptive or normative attention. They are proposed as methodological distinctions of the human in its turn conceived as one with symbolic mediation.

IX. The Methodological Status of Art Education

The conception of qualitative symbol has dramatic implications for the entire field of methodology, philosophy of science and education. Of singular importance is the notion that problems of technical scientific methodology in dealing with the conditions under which an object can become the object of a scientific sign, have their roots in a conception of aesthetic subject matters. To say, for example, that the human sciences, educational theory, psychology or psychiatry may be expected to gain greater precision by turning to methodological discussions of aesthetic subject matters is to say that these fields depend in some significant way upon a theory of art and art criticism. To argue this way is to argue against the contemporary trend of argument - in effect the notion that art theory must turn to the human sciences for explanatory devices. Scholarly understandings of arts affairs are thought to flow from distinctions and explanations already at work in the human sciences. Here argued is the notion that such distinctions and explanations as are to be found in these sciences should yield to a "reconstruction" afforded by a systematic theory of art.

Of immediate concern to the present inquiry, however, is the impact of this methodologically formulated conception of means, ends and methods upon art education. Three senses of art education should be treated.

1. If it is the case that control and artistic production are compatible (and necessary) conceptions - that the purposes, goals or ends together with the means, "need," "materials" or components, and the form or method, are qualities, then qualitative mediations can be learned. Art can be taught. Still, the quality must be present in order to be taught - or learned. And the quality must be presented if it is to be a candidate for rejection or acceptance in judgment. Hence, in the present sense, art is education. The artistic act is educative. Aesthetic subject matters are the occasion of qualitative learning and "instruction." Artists go to art works. Poets go to poetry. The history of art is a history of qualitative education when viewed as a history of the creation of what presently can be studied for purposes of gaining controls. The plethora of "styles" or modes in contemporary art are to be viewed as a "montage" of qualitative proposals - that is, substantive forms which are candidates for being selected, rejected, or followed. Thus art education is an affair of qualitative independence (save in those fields in which theory enters instrumentally to assist in the gaining of qualitative consequences - poetry and literature, for example).

2. A second sense in which to understand the terms "art education" is fully within the context of qualitative predominance. Theory enters as an instrument to direct, point out, reject, accept, propose directions and redirections for qualitative symbols. In art appreciation "courses" or gallery "tours," in art criticism, aesthetic judgment and art history, and in teaching situations involving dance, sports, music, painting, marching, physical education, or manners, theory is at work directing attention to, describing and appraising aesthetic subject matters. Thus, to point out to others, to bring others to, to provide others with, to show others how they are instituting or how they might institute, qualitative relations is to function as an art critic and/or art educator. Art education is to be found in the act of deliberate nurture, in the act of nurturing the human to appreciate, institute, assess and refine qualitative symbols.

3. A third sense in which to understand the terms "art education" is as it is interpreted with terms which help to distinguish one range or configuration of aesthetic subject matters such as the term "fine arts". For example, a distinctive discourse, language and knowledge has developed along with and as indigenous to the work and education of practicing artists. Such language may be distinguished as a species of common sense discourse rather than recise discourse - although here one must still account for the rather sophisticated and somewhat critical language developing in the contexts of art history and criticism. (Here too, one must realize that theory in art education is included in the broad context of educational theory and, along with other theoretical endeavors making up educational theory, moves with adaptations of common sense (discourse). This language has been called the "shop talk"[26] of the artist. It is looked upon as the object for critical attention in those efforts aiming to discipline theory of art education into critical and precise discourse. The shop talk helps to distinguish different "fields" of qualitative subject matters. What is in these fields does not depend upon the language (precise or ordinary) herein labeled "shop talk." But such talk helps direct us to distinguish among aesthetic matters which in their turn have occasioned the talk.

The methodological interest in shop talk is very different from other interests. For example, in some cases the interest in grounded in an inclination to "order" the discourse of artists in accordance with metaphysical fashion. In still other cases, and with growing emphasis today, the statements to be found in the discourse of artists, art critics and art educators is examined for purposes of reordering such language in accordance with logical forms. In this last connection one can run the danger of becoming lost in the intricacies of linguistic distinctions. Alternatively and methodologically, analysis is directed to such statement and assertions of art affairs for purposes of (a) ordering the language according to logical canons, and (b) ordering the language with direct attention to what the language is about - the referents. Methodological analysis of artistic discourse is logical, empirical and educational in relation to "shop talk." With logical forms the analysis is directed to the referents of the language and statements as matters to figure in the determination of linguistic adequacy. With the educational emphasis such analysis addresses itself to the role of such language in the production, appreciation or criticism of aesthetic subject matters. Hence, the discussion of formal properties of qualitative mediations may be interpreted to be "a theory of art in its general phases." And the theory to emerge from methodological analysis of substantive areas such as "plastic arts" and shop talk peculiar to the plastic arts, is to be construed as a substantive case of theory in art education. There are three types of language developing in the area often referred to as the "fine and applied arts." There is that language developing as indigenous to a particular art enterprise such as weaving, sculpture or architecture. This language helps distinguish the qualities being worked with in a particular art field. Then there is that language that has developed as applicable to the sweep of matters encompassed by the term "fine and applied arts." Such language as is suggested by the terms "elements" and "principles" of art is of this category. And finally there is that language which functions in other than an ethically neutral way - normative or prescriptive language.

1. Substantively particular aesthetic subject matters are located by ("pointed at") or represented by such terms as "warping," "sateen weave," "broken twill weave," "filler yarn," "float," "weft," "pile," "Peruvian textile," "flossa," "rhya," "rug," and "wall hanging (WEAVING); "lost wax or cire-pardue," "casting," "clay," "wax copy," "two pieces mold," "investment," "goldweight figure," "patina," "Pre-Columbian Mexican," "Archaic Greek," "chipping," "relief," "crucible," and "Etruscan" (SCULPTURE); and "Impressionism," "Venatian color glow," "color tension," "cartoon," "chiarascuro," "ground," "gesso," "glaze," "under painting," "pointilliam," "tempera," "gouache," "positive and negative space," "open and closed," "hard edged forms," "cool," "collage," and "Op," (PAINTING). These three groupings of terms together with other member terms unaccounted for here help us locate distinctive qualities and mediations. These terms in discoursive form stand for, represent, indicate or direct attention to matters, stuff or qualities worked by artists. These terms when incorporated into statements and conclusions stand as the indigenous knowledge (however secure or insecure such knowledge may be) of the field.

But this is not to argue that the purpose for which the artists works is to gain such knowledge. Argued is the view that in the course of their work, and in the course of the history of art and criticism, artists and those intimately connected with the art world have developed a distinctive and indigenous knowledge. Art education in the sense in which theory enters qualitative domains to perform an instrumental role is therefore subject to the usual canons of logical and methodological criticism.

2. There is the more generic discourse or language that has grown with, emerged from, or appeared within a whole cluster of arts affairs. Such language appears in the discourse of any one working in the area of the "fine" and "applied" arts. There are terms and categories which are common to architects but not to painters and weavers, as we have argued. But there is also a set of terms which are common not only to architects, but also to weavers, painters, sculptors, potters and designers. Those who use such terms as "plastic elements," or "elements of design," are attempting to distinguish some generic terminology. Such terms as "line," "color," "texture," "space," "saturation," and "form" are not unique to one shop talk category, say painting, but occur in and along with the unique shop talk of any "plastic" artist. And, here again, these terms have within the contexts of practicings artists, been linked to other terms to take the form of statements, assertions, questions and propositions whose cognitive security may not be above question but whose cognitive character most certainly is. And, again not assumed, is the notion but arts affairs have as their objective the production of, or the warranting of, such knowledge claims as may be found in the various life situations practicing artists, critics and historians find themselves.

3. There is the discourse, the language which has grown with, emerged from, or appeared within a whole cluster of art practices which appears to be singularly normative or prescriptive in character. Rather than being ethically neutral these statements direct us one way rather than another - or at least they attempt to do so. Such statements attempt to help in the forming, the relating or the selecting and rejecting of qualities represented in the first two types of discourse. It is constructed as art directives, educational guides or judgmental criteria - as norms in accordance with which one constructs, orders, evaluates, selects and rejects, art objects. "Principles" of artistic construction are forwarded as "form follows function," "variety in unity," "less is more," "organically related forms," "art must be based on the two fundamental elements: space and time," "static rhythms are not sufficient," "art should stop being imitative," "artists must learn to apply the laws of plastic organization needed for a healthy created image," and "respect for the materials - the integrity of the materials is a must."

If discourse in the areas presently holding our interest is to become critical and more adequately educational (instrumental) - if indeed we are to have a systematic theory of "fine" or "plastic" art education - then it is this discourse that must become the central subject matter for methodological analysis. Suggested, though by no means adequately developed, is the notion that discourse which has already developed, for the most part commonsensically, within the history and field of practicing artists is the source for a precise theory rather than some other source in some other universe of discourse. Logical-methodological analysis enters instrumentally and normatively to take such discourse critically into account.

> For good or evil I have learned little from what has been written in the name of Philosophy of Art and Aesthetics, since, it has seemed to me to subordinate art to philosophy, instead of using philosophy as an incidental aid in appreciation of art in its own language. I have learned much, however, from the writings of essayists and literary critics . . . and from what poets, painters, etc., have said about the arts they have practiced - a source in my judgment that is unduly overlooked by those who philosophize on art.[27]

Discipline in art education, like discipline in human science, will be achieved, among other circumstances, when discoursive adaptations of common sense or ordinary discourse yield to the formative influences of methodological discourse. A necessary condition for this is of course the choice on the part of artists and art educators to submit their language to such criticism (self or otherwise imposed) and to be prepared to take the consequences.

XI. Appendix: Components of Research Design for Value Inquiry

The present study has been normative with respect to the problem of forming and proposing a theory of theoretical and qualitative subject matters. But proposed is an ethically neutral description of linguistic and aesthetic phenomena. Yet the educational undertaking is one which chooses and forwards among the methods and "content" of theoretical and qualitative pursuits. Value Research in education is helped only at the point of *2* in the diagram which follows:

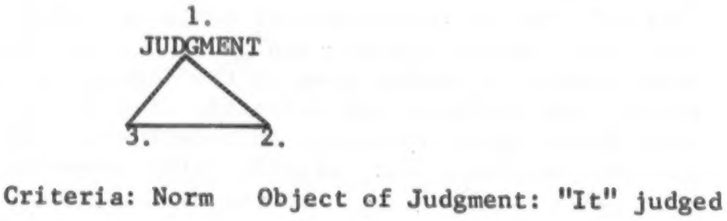


Figure 6

Value research into aesthetic subject matters would center in those judgments making reference to qualitative matters. A necessary condition to such judgments is the presence of alternatives - the occurrence of an "ethical" debate, that is, a debate to exclude, to determine as good or not-good, to act one way rather than another with, qualitative controls. Without conflict, without at minimum two objects competing for acceptance and rejection (if only the judgment to accept or to reject *an* object or practice) there is no occasion for value research. Judgments having to do with accepting or rejecting - with the *imperative* terms of "should," "must," and "ought," and the *proposing* terms of "good" and "desirable" are attributes of the subject matter and also the objective of value research. The end of value research is an explicit and systematically formulated proposal for the educational undertaking.

Issues as to what is to be selected and what rejected in aesthetic subject-matters defines the arena of controversy, in its turn the field for value research. Such issues may be ordered according to Figure 6. Judgments (1) are formed in a certain way - in accordance with some procedure. Claims to scientific or intuitive, common sense or "authoritative" methods are to be found. *The judgment is a theoretical* object about something which itself is not theoretical, 2. And the judgment is based upon implicit or explicit criteria or "answers to the question, "why!" 3. These three dimensions of value research may be set forth as follows:

1. *The judgment*: It is a communication of value. Its function or purpose may be distinguished as analytic, evaluative, recommendational, or as instrumental to the act or activity judged. As an affair of theoretical symbols it is subject to logical assessment. Further, it directs attention to something other than itself. It is constructed, if not haphazardly, in accordance with some method or procedure which should be made articulate and featured as a selection of method. Warrant for the selection of method is an investigatable matter in judgmental processes.

2. *The object*: A description or account of the object - what the judgment is about - must be made articulate. As such it is a descriptive statement - making reference to the object judged to be good, bad or in relation to which one should act - one ought act. The relation between the object judged - selected or rejected in evaluation - to other matters should be made articulate. "ALL" can never be the object of value research. The relation between the object described and other qualitative matters - other matters making up the map of education as an institutionalized undertaking a society existing

at some time and place - all these are to be accounted for as one distinguishes the object of judgment and the field of controversy.

3. Criteria: An implicit or explicit criterion or norm is at work and must be distinquished in value research. Proposed criteria of adequacy, warrants for selecting and rejecting, bases for imperatives and proposals, must be set forth. How inclusive they are must be indicated. Source and warrant must be treated. Are they public, available and distinguishable, or are they private, unavailable, and distinguishable? How are such criteria as are proposed applicable? What skills and knowledge are required to employ such criteria - to determine their adequacy?

Value inquiry will take one of three possible forms: First,

> (a) Critical-Evaluative: Basic alternatives for 1, 2, and 3 (Figure 6) are accounted for and the task of evaluation forged. While there is no "method" that is philosophical still all value inquiries move in accordance with logical canons, and in such a way that not "anything goes" with respect to claims made in the several sciences. Criteria are set forth, made explicit and defended. The Critical-Evaluative study locates, sets forth, moves logically in relation to, and forwards its own warrants and bases for, significantly competing alternatives for the enterprise of education. The study is responsible to contextual or substantive connections. It is not conducted within, nor does it address an object which exists in, a vacuum.
>
> (b) Critical-Analytic: The categories of value inquiry, such concepts as "truth," "meaning," "signs," "referent," "dualism," "reductionism," and "explanation", are featured in Critical-Analytic research. Logical canons and logical status are featured. The attempt of a Critical- Analytic study is to render more precise a particular concept, category or expression. The theoretical architecture of the judgment (1) together with the formulation and definitions of the "it" judged and the criteria affirmed for such a judgment (2 and 3) are subjected to systematic analsis. Proposals here would be in the form of more adequate definition, the inadequacy or adequacy of certain categories or explanatory devices, and the suggestion, perhaps, for an outline of contextual relevance for the entire judgment under scrutiny.
>
> (c) Critical-Speculative: Alternatives are accounted for (1, 2, 3, Figure 6) and inquiry proceeds in a manner not unlike in kind that of (a) and (b) above. But unlike (a) and (b) the Critical-Speculative work is upon the task of forging a new substantive alternative or a new technical tool. That is, a new alternative concept, category, or sweeping proposal is to appear to take its place in and to expand the arena of controversy. Such speculative endeavors, while responsible directly to logical canons and scientific inquiries, may outstrip such inquiries - forging concepts even for them to pursue in the future.

There are other attributes of value research which are shared with any systematic cognitive pursuit. The significance of the problem, the establishment of a relevant context of ideas (universe of discourse within which the study is to move and to which it is responsible). The developmental character of the argument, the outline, articulated assumptions and working concepts - early introduced or developed in continuity, bearing upon other matters, and a reflection of familiarity with similar and relevant researches - all of these are, as in the case of any critical investigation, attributes of value research.

Finally, and in the foreground of attention should be the fact that the study is being conducted by educators responsible directly to the problems, issues and activities helping to distinguish the institution of the schools. If the study is to be "tested" it is in the arena of education that this testing will take place. If it is to make a general contribution to the educational arena that contribution will be to the arena of systematic theory. Value research may lead to consequences wherein some qualities presently included are excluded. Other qualities, now unavailable to the work of the schools, will enter the curriculum. But this is going on anyhow. The significant contribution of Value Research will be at that point where educational judgments become more precise, systematic and disciplined: For Value Research is an alternative to common sense in the determination of educational values. The achievement of a discipline in education is promised at that point where this or that common sense term leaves the context of educational theory to be replaced by a term or concept whose logical status is more secure and whose consequence is more of such concepts.

LIST OF REFERENCES

1. Because of the widespread use of the term "social" to distinguish a group of sciences from psychology. I choose to use the term "human." So employed "Methodology of the Human Sciences" includes psychology as well as other inquiries commonly subsumed under the label, "Methodology of the Social Sciences."

2. Tyler, Ralph W. "The Contribution of the Behavioral Sciences to Educational Research," in First Annual Phi Delta Kappa Symposium on Educational Research, ed. by Frank W. Banghart, (Bloomington: Phi Delta Kappa, Inc., 1960), pp. 62-63.

3. See particularly in this connection the excellent one-essay account, Hempal, Carl C , "Explanation in Science and in History," in Frontiers of Science and Philosophy, ed. by Colodny, (Pittsburgh: University of Pittsburgh Press, 1962). pp. 7-33

4. Nagel, Ernest Book Review: "Philosophy in a New Key: Susanne Langer," The Journal of Philosophy, Vol. XL #12, June 10, 1943, p. 324.

5. Nagel, Ernest, Sovereign Reason, (Glences: The Free Press, 1954), p. 44.

6. Peirce, Charles S. The Collected Papers of Charles Sanders Peirce, ed. by Charles Hartshorne and Paul Weiss, (Cambridge: Harvard University Press, 1932), Vol. II, p. 274.

7. This illustration is taken, with some liberties, from, Moore, Edward C., American Pragmatism, (New York: Columbia University Press, 1961), pp. 54-55.

8. Quine, Willard Van Orman From a Logical Point of View, (New York: Harper and Row Publishers - Harper Torchbooks, 1963) p. 42.

9. Nagel, Ernest "Symbolism and Science," Symbols and Values: An Initial Study. Thirteenth Symposium of the Conference on Science, Philosophy and Religion, ed. by Lyman Bryson, Louis Finkelstein, R. M. MacIver, and Richard McKeon, (New York: Harper and Brothers, 1954), p. 45.

10. Buchler, Justus, The Concept of Method, (New York: Columbia University Press, 1961), p. 131.

11. Black, Max, Models and Metaphor, (Ithaca: Cornell University Press, 1962), p. 248.

12. Ibid.

13. Nagel, Ernest, The Structure of Science, (New York: Harcourt Brace and World, Inc., 1961), pp. 536-537.

14. Randall, J. H. and Buchler, J., Philosophy: An Introduction, (New York: Barnes and Noble, Inc., 1946), pp. 198-199.

15. Black, Max, Critical Thinking, (New York: Prentice Hall, Inc., 1946), p. 296.

16. Champlin, Nathaniel L., "Is the Language of Methalanguage Educational?" Studies in Philosophy and Education, Vol. II, #3, Summer 1962, pp. 258-287.

17. Nagel, Ernest, Review of "Philosophy in a New Key, by Susanne Langer," op. cit., p. 329.

18. Nagel, Ernest, "Symbolism and Science," op. cit., p. 41.

19. Vivas, Eliseo, "Two Notes on the New Naturalism," The Sewance Review, Vol. LVI, #3, July-September, 1948, pp. 477-509.

20. see p. 24.

21. Dewey, John, Logic: The Theory of Inquiry, (New York: Henry Holt and Co., 1938), p. 70.

22. Dewey, John, Art as Experience, (New York: Minton Balch and Company, 1934), p. 48.

23. So too in other fields. See, Shapiro, Karl et. al., Posts at Work, (New York: Harcourt Brace & Company, 1948).

24. Boardsley, Monroe C., "On the Creation of Art," in The Journal of Aesthetics and Art Criticism, Spring 1965, p. 296.

25. Villemain, Francis T., "Methodological Inquiry Into Aesthetic Subject Matter," Proceedings of the Seventeenth Annual Meeting of the Philosophy of Education Society, ed. by Robert Mason (Philosophy of Education Society, Syracuse University, Syracuse, 1961), pp. 162-163. What follows in the study as an account of formal properties of qualitative mediation and an account of the four contexts of symbols (Theoretical Predominance, Qualitative Predominance, Reciprocity, and Qualitative Independence) are paraphrazing of his thought as developed in his The Qualitative Character of Intelligence. Ed.D. Report (New York: Library, Teachers College, Columbia University, 1952). Responsibility for the formulation of this account, of course rests with the present writer.

26. In this connection see particularly Ecker, David, Toward a Methodological Conception of Problem and Control in Art Education, Ed.D. Report (Detroit: Library, Wayne State University, 1962).

27. Dewey, John, "A Comment on the Foregoing (Croce's) Criticism," The Journal of Aesthetics and Art Criticism, Vol. VI, #3, March, 1948, p. 208.

EXCERPTS FROM THE DISCUSSION WITH MR. CHAMPLIN

Audience: I have been having difficulty in understanding these concepts of qualitative intelligence and qualitative problem solving. Maybe there is a problem of communication here. I am very thankful for the additional amplification given here to these conceptions. I think there are some others who have misread this literature too. I think Beardsley misread Eckers paper on qualitative problem solving; Ecker did not claim that the artist's initial vision or idea necessarily fixed all his succeeding moves. But many people have made a fuss about the distinction between a task and a problem. Beardsley, in the article you referred to, distinguishes between a task and a problem. So does Justus Buchler in The Concept of Method. Now if a control may change at any time in an artistic ordering or qualitative ordering, doesn't this fact weaken the sense of problem solving? Isn't the distinction between task and problem crucial? And in which universe of discourse does problem solving really belong?

Mr. Champlin: You are raising the larger issue of the relationship of the discursive or the theoretical and what I call -- what we are calling -- the qualitative. First, I would point out that any time there is a shift in control from the qualitative to the theoretical, there is a possibility of this taking place without reflective judgment. I take it that this is an occasion for inquiry, you see, and I think that the only rationale that can be offered for this is the traditional one -- that the reflective approach is more adequate than the "don't think, act" approach. Expecially at the point where value decisions are made. So my answer to your question would be cast in the two-thousand year prizing of reason and inquiry. Specifically, either we see ourselves moving to improve the judgments made by youngsters who are willy-nilly moving with qualitative materials or we do not. Either we provide for situations in which qualities are selected and forwarded as against, or over, other qualities or we do not. My answer would be simply that to the extent we have affirmed art education as a worthy enterprise, and to the extent we recognize that to have an art experience is not necessarily to have a good art experience -- that we must select and reject from among art experiences, then to this extent one has a need for inquiry and under understanding . . . .

Audience: But I am raising the question whether or not qualitative ordering is an activity. Is there a difference between a task and a problem? And what is the universe of discourse to which problem solving belongs?

Mr. Champlin: "Problem" as a category properly falls within the domain of educational inquiry. And I take it that if "problem" enters our discussion at all, or if "task" enters our discussion at all, they would become for the moment synonymous with such terms as end, objective, goal. To have a problem is to have an end. To have a task is to have something to do, to have some end in view, some objective, some future in mind, some desired future state of affairs. I know I am not making a distinction you may want to make between task and problem. But for me end, goal, objective, problem, and task mean the same. I think the artist has a problem or task in the sense that he has an end, and I have tried to illustrate by my test the sort of end he has. I think a psychologist has an end which is testing a theory or building knowledge. I think I have an end with you now, and you have an end, and you have a problem.

Audience: I have a real problem!

Mr. Champlin: Anything that comes after this now as a problem or task is set forth in language. As I understand Ecker, he is pointing to that as a legitimate sense of the word problem, but he is also pointing to a canvas as an illustration of another type of problem which is not set forth in the way that you and I have just set forth our problems. Dr. Ecker, do you want to respond to that?

Mr. Ecker: Until I know what the questioner's universe of discourse is, I can only repeat some of the arguments I presented recently. A common sensical answer inevitably could be taken in several ways and would thus be ambiguous. Until you tell me or suggest in what crucial ways the ordinary language word "task" is different from the ordinary word "problem", I really don't know how to answer you. I am not attempting to block inquiry here; rather I am suggesting that we would need much more precision on certain specific issues. For example, the literature on problem solving tends to reduce the concept to cognitive problems, as I have pointed out in a footnote. Now, of course, I recognize these because I've given a part of my paper over to what I've called "theoretical problems". But I hope that I have demonstrated by examples and arguments that there is another type of problem, or task if you will, that is not stateable in language. The example I like goes like this: The critic-teacher turns to the supervisor and says, "That student-teacher just doesn't know how to act with children". Now, what is being referred to? Does the student-teacher not have a problem because he can't put it into words? I don't think so. I think words can refer to such a problem. Yet many problems of teaching are not susceptible to formulation in the form of a question or statement in language, nor can they be in the form of contradictory propositions. If they could be, then I think you would have a very good argument for saying that all problems are cognitive ones and thus capable of being solved by scientific methods. But I don't think we are talking now about the paper we've just heard, although I am sure it is related . . .

Audience: I think all of your papers are related and I am interested in their continuity. But I understand now what you mean by qualitative problem. It can't be formulated into systematic if-then generalizations in language.

DESCRIPTION, PREDICTION, AND EXPLANATION: AN EMPIRICAL VIEW OF RESEARCH

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When one speaks of empirical research to people who are professionally engaged in education and the arts, he is often met by a patronizing acknowledgment that something called the "scientific method" has proved useful in other disciplines but that this approach to "truth" and "understanding" has little relevance to their field of interest. To the extent that they as individuals believe in the uniqueness and the "free will" nature of human behavior, they have a legitimate argument, for the scientific method is predicated upon the belief that human behavior is not unique or random and appears to be so only because we do not fully understand it. If one rejects the belief that human behavior is fundamentally systematic and explainable then they must also reject a scientific approach which assumes that it is. If on the other hand one can accept the premise that human behavior can be meaningfully described, predicted, and explained, he will recognize the potential contribution that a scientific approach to the study of behavior can make.

It is not the purpose of this paper to debate the reasonableness of the scientific approach to the study of human behavior, for the existence of this methodology is a recognized fact, and one either acknowledges its appropriateness or does not. Rather, it is assumed that the reader accepts the premise that human behavior can be systematically examined and it will be the purpose of this paper to translate the general objectives of research, description, prediction, and explanation, into techniques and procedures which should prove useful to scholars in any discipline, including the field of art education.

The Role of Description in Research

The Nature of Description

The fundamental basis for the description of any object or event is the identification of distinguishing properties. We say for example that one object is a chair, another object is a table and a third object is a bench. Typically, all three objects have four legs fixed more or less vertically around the corners of a relatively flat horizontal surface. Why then do we classify the three objects differentially? Perhaps it is the length of the legs, although coffee tables have short legs and bar chairs have tall legs. Perhaps it is the presence of the back although both benches and chairs typically have backs. Although we might pursue this homely example further it is perhaps sufficient to say that we choose properties which allow us to functionally classify the object (or event) for some preselected purpose. It must be obvious that a given object or event has essentially an infinite number of properties and that it could therefore be reclassified in a correspondingly unlimited number of ways, depending upon the purpose for which we intend the description. It must also be obvious that to the extent that two objects share a number of common properties we must be increasingly specific in our selection properties if we wish to distinguish between them.

In the realm of the behavioral sciences most of the properties of interest to us are not immediately apparent to our senses. One cannot, for example, observe a property such as artistic ability, or creativity, or intelligence, or personality, in any direct way. A creative person may be tall or short, fat or lean, wear glasses or not; and as far as we now know, we cannot depend upon any physical description of the person to help us identify who is and who is not creative. What kind of property then is creativity and how do we know (or perhaps why do we think) that such a property exists? In scientific terms we regard such inferred properties (ability, creativity, intelligence, and personality) as constructs. We observe, for example, that given a series of apparently similar tasks some people produce solutions which are commonplace and pedestrian, whereas, other people produce solutions which are highly unusual. In an attempt to account for the fact that some individuals rather consistently produce one type solution while other individuals produce another, we can propose a hypothetical ability which we will call X, or Y, or if we choose, divergent thinking, or creativity. A construct therefore, is a hypothetical property which we propose to account for in our observations.

If it is our intention to use such hypothetical properties as creativity or intelligence to describe various individuals, we must contrive situations where we believe that the creative individual will respond in one manner and the noncreative individual will respond in another. The identification of such tasks or situations is a necessary condition of any descriptive process. A task which is not sensitive to reliable differences among individuals is of little descriptive value. The basic task of the researcher in description, therefore, is one of identifying tasks or situations which allow us to make inferences about the absence or presence of observable (or of hypothetical) properties or constructs.

Operationalism in Description

Whereas the practitioner in a field is allowed a rather substantial amount of latitude in his professional vocabulary, such is not the case with the researcher. We may for example allow a teacher to talk about a child's artistic, or creative, or intellectual ability and assume that we both know with sufficient agreement what is meant by each term. To find such ambiguous terms in a research report however would leave us somewhat dismayed. This is not to say that we endorse the imprecise use of terminology by the practitioner. Rather what is meant is that for some purposes precision in meaning is less crucial than in others, particularly if there are a sufficient number of additional cues to add substantive meaning to the verbal description. A teacher, for example, may illustrate his impression that a particular student is creative by showing you a piece of the student's work. In this case the student's product serves as an exemplar of what the teacher means by creativity, whether or not the two of you have any common semantic understanding of the term. There is, indeed, ample evidence that when people talk about abstract concepts in the absence of a common frame of reference, they have only the most general idea of what each other means, if that. What is needed in such cases is a referent which both parties can look to as an exemplar of what is meant by creativity.

One obvious example of a referent which might be used with a property such as creativity would be a particular instrument, such as Torrance's Test of Creative Thinking. Some might object, of course, that there are other tests which also measure "creativity," perhaps more satisfactorily. Such comments, however, are not entertained by the experience for two reasons: First, the matter of whether or not two instruments measure the same thing is a statistical issue which cannot be adequately assessed intuitively; Second, the question of "which is better?", implies an unstated, or perhaps, generalized purpose for which it would be very difficult to argue that one instrument is universally better than another.

To avoid matters of subjective preference let us agree that we will accept any descriptive property as long as its originator explains how he obtains a public measure of it. Conversely we will accept no measure which is private to the observer or to the subject being observed. This is the essence of empirical (or operational) description. Perhaps a word of elaboration about the use of public and private in this context would be useful. The term public here implies a means of measurement which results in behavioral record, a self report, a test score, an art product, a choice among alternatives, etc.; the term private suggests a state of mind, a belief, an insight, a value, an attitude, a talent, which is accessable only to the perceiver. For hypothetical properties to be meaningful they must manifest themselves under conditions which allow observation by any qualified person.

One may, of course, accept a measure such as Torrence's or Getzel's & Jackson's as an operational measure of creativity or he may not. That decision is not important at this point in the discussion. The important consideration is that any qualified reader should be able to look at the instrumentation of a particular description and conclude from the procedures used how that investigator wished to use a term such as creativity.

Levels of Description used in Research

Nominal Measurement:

The basic process of description is one of placing objects or events into categories. A first consideration in any descriptive process, therefore, is the prior specification of what constitutes a usable category. In its most primitive form a property can be thought of as simply absent or present and for many purposes the description of whether an object has the property or does not have the property is sufficient. In describing a person for example it is frequently only necessary to say that he is male, or that he is present, or that he was right. Because each of these descriptive categories constitutes one of a dichotomous pair, to mention the presence of one automatically implies the absence of the other. At this same level of description it is possible to extend from two classes to multiple classes where we may describe an object as being red, or blue, or black, or green, or we may describe a person as an American, a Canadian or a Frenchman, or we may describe an art object as done in oil, or tempera, or water color, or plaster. In the language of measurement such descriptions are referred to as nominal and imply nothing more than the ability of the observer to sort objects or persons into a number of preselected categories.

Ordinal Measurement:

In many instances the nominal level of description is sufficient to the purpose for which the description is being made. In other instances, however, it would be useful if descriptive categories could be placed in some meaningful order along an underlying continuum. Although to speak of placing two categories in order may seem trivial, in the dichotomous case we can think of a continuum divided into classes of more than or less than. As we move to three or more categories (more than, equal to, less than; or favorable, neutral, unfavorable; or agree, undecided, disagree) the implied continuum becomes more apparent. The extension to the four, five and more categories is obvious.

The importance of the ordered category or ordinal scale in education and psychology can hardly be overestimated, for it is this level of description that most measurement instruments provide. The only assumption involved in the ordinal scale is that the observations can be placed in a meaningful order. For most properties such an assumption is not difficult to justify even though we may be quite unwilling to specify the exact nature of the underlying continuum. Strictly speaking, almost all educational and psychological measurements would be conservatively regarded as on the ordinal scale of measurement.

Interval Measurement:

As its name suggests, the ordinal scale just described is a measure of position (rather than quantity) and allows only inferences of rank order. If it is our wish to describe a phenomenon in quantitative terms, we must make one additional assumption about the placement of the categories on the underlying continuum. In practice this means selecting categories which cannot only be ordered meaningfully but ones in which the perceived distances between them can be specified. That is, on a scale of favorableness toward some abstract painting such as Picasso's, The Three Musicians, we might propose a scale such as like greatly, like, neutral, dislike, dislike greatly. An ordinal scale would simply require an acceptable ordering of the categories. The interval scale, however, requires us to specify what we believe the degree of favorableness among the five categories to be. For example, we might assert that we believe there is as much difference in attitude between the response of like greatly and like as there is between the responses on dislike and dislike greatly. Understandably, because we are dealing with a hypothetical continuum, favorableness toward this painting, the assignment of regular steps is no trivial psychometric problem. If it can be accomplished, however, the interval scale of measurement permits many analytical procedures which the ordinal scale does not justify. It is for this reason that psychometricians have attempted to develop procedures which will allow research workers to make the assumption of quality of intervals. The reader interested in a more extended discussion of the nature of measurement scales is referred to the work of S. S. Stevens (1959).

The choice of a descriptive prodecure is largely a compromise between the necessity for precision in the description and the amount of effort the researcher is able or willing to expend to meet the necessary assumptions. The time-worn bromide, or not needing a sharp knife to cut soft butter, is indeed appropriate, for increases in the sophistication of measurement scales are often bought at a substantial price in time and effort. On the other hand, precise descriptions cannot be made without the use of precise scales, and far too often researchers have found that subtle experimental differences have been washed-out or concealed by imprecise measurement procedures. Prior consideration given to the nature of the property to be described is therefore not a minor concern and should be weighted carefully at the planning stage of any research project.

The Methodology of Description

Having considered briefly the general nature of description, let us now turn our attention to more specific considerations. Stern (1963) has suggested that most descriptive procedures can be classified as case-studies, causal-genetic studies, psychometric studies, or situational studies.

The case-study method, as defined by Stern involves a combination of historical data gathered with the intent of identifying recurrent trends or patterns of behavior assumed to be related to the present status of the object being described. Although the case-study method is primarily an historical integration of interviews, documents, and similar anecdotal records, a number of statistical techniques for handling idiographic data (Cattell's P technique, Stephenson's Q technique, Flanagan's critical incidents technique) provide models for dealing with individual patterns and records. The case-study approach is typically found in clinical studies of behavior and has been extensively utilized by such workers as Allport, Murray, and White.

A second approach to gathering descriptive data is referred to as the causal-genetic method. This is a more narrowly focused, normative approach which seeks to relate the developmental stages or patterns of an individual with those of a particular reference group. This genetic or developmental approach in describing behavior is commonly used in clinical and developmental psychology and is based on the premise that individuals develop in somewhat similar ways and that both similarities and aberrations in the development of an individual, compared with some normative reference group, provide descriptively useful data. Allusion to the causal-genetic approach is found in the work of Lowenfeld in art education and has been the basis for a great body of work in the field of developmental and clinical psychology.

A third approach to the collection of descriptive data is referred to as psychometric. The psychometric approach to description is almost entirely normative and depends upon the development of a standardized procedure for making observations (tests) or upon the use of subject self-reports (inventories). The behavior of the individual either through self-report or observation is then related to the behavior, under similar circumstances of some appropriate reference group. The relative position of an individual with respect to this reference group then provides a descriptive index by which he or she can be described. The psychometric approach to gathering descriptive data is certainly the most widely used and methodologically sophisticated approach although is often accused of being insensitive and mechanical. The beginning reader interested in the range of psychometric description is referred to Cronbach's (1960) measurement text.

The fourth method of gathering descriptive data is referred to as the situational method. The situational approach to description involves an explicit rejection of normative and historical antecedents and operates from the premise that although an individual's predisposition to respond in certain ways may be learned from previous experiences, it is the present set of circumstances to which the individual is actually responding; therefore the most meaningful description of his behavior is his present not his historical response. This approach is perhaps more commonly known as the experimental approach in which environmental conditions are varied and the response of the individual to these manipulated situations is observed. A less well controlled example is found in the observational study in which the observer introduces minimal external influence, observing the interaction of one or more individuals and their environment. The situational approach to description is strictly empirical in its emphasis concerning itself only with phenomena which occur at a given point in time and space. Some of the techniques that are appropriately classed as situational are, sociometry, role playing and work sample tasks.

Although research workers often exhibit methodological preferences in their own work, the well rounded research worker is able to match his data gathering techniques to the descriptive data that he wishes to gather. In the field of art education the reader will recognize all four approaches, mentioned here, represented in Hausmann's (1963) bibliography of research on teaching in the visual arts.

Reliability in Description

Although each of the four previously mentioned methods for gathering descriptive data is in some sense unique, each has a basic requirement that it be reliable. The requirement of reliability, although taking different forms for nomothetic and idiographic data is nevertheless the first requisite for any description, Let us, therefore, consider the general nature of reliability and then describe some of the specific problems involved in its assessment.

Returning to our earlier definition, that description is a process of assigning phenomena to classes, it is important that this assignment proceed in a manner which allows us to distinguish it from random or chance classification. If, for example, we have a group of judges rate the artistic merit of a group of student art works as of high, medium or low quality and then find that the distribution of judges ratings is not significantly different from one which would be made if we were to assign ratings randomly, we would describe the judges ratings as having low reliability. Although we might like to believe that this example is simply hypothetical, there is ample evidence from studies of raters that low reliability is disturbingly common in evaluations of student products.

It must be obvious that unreliable descriptions are of little value to the researcher for they represent no advantage over simple random classification. It is extremely important, therefore, that when a description is provided that it be accompanied by some evidence of its advantage over chance. The concern of the researcher for reliability also rules out the use of isolated or unconfirmable observations, for although an individual observer may have seen a flying saucer or had an extra-sensory experience, such isolated and personalized experiences have no basis for generalizability and therefore have no scientific utility.

As a beginning point in our discussion of reliability, let us consider a very common form of psychometric data, the test or inventory score. With these kinds of data each individual has an obtained score which we may designate as X. It is assumed that this obtained score for each individual is made up of two main components, a true score, which we will designate as T, and an error score, which we shall designate as E. The basic problem in any analysis of reliability is to determine what portion of the variation among observed scores is due to variation among individual's true scores and what portion is due to random variation or error.

To be more explicit, if we consider σ^2_X as a measure of variation among observed scores, this quantity is assumed to consist of two parts, true score variance σ^2_T , which represents the variation among the true scores of the individuals being measured, and error variance component σ^2_E , which is a composite of such chance factors as guessing, temporary lapses of memory, mis-scoring, environmental influences on test scores (and all other factors which would lead to variation from one occasion to another).

Because it is not possible to obtain a direct estimate of the true score variance σ^2_T , we customarily approach the coefficient of reliability by obtaining an empirical estimate of the error variance σ^2_E and use the following form of the definition.

$$1 - \frac{\sigma^2_E}{\sigma^2_X} = \text{Rel.}$$

Reliability Estimation

Although often not possible in psychometric research, the most straight forward way of estimating the consistency of a descriptive measure is to obtain several independent observations (scores) of each student on separate occasions. If we consider only the simplest case, where we have one repeated testing, we may regard the correlation between the test score obtained on the first occasion with the test score obtained on the second occasion as being an estimate of the reliability of the measure. The reader will recognize, of course, that there are several obvious difficulties in obtaining repeated measures. There is, for example, the problem of actual change in the subject over time due to maturation or experience. If we could assume that each subject would change by a similar amount, such variations would be ignored in the correlation coefficient. Equal changes, however, are almost certain not to occur, particularly as the length of time between testings is increased. This fact leads to a complicated interaction between the actual reliability of the test, the length of time intervening between testings, and the exposure of the individuals to differential experiences and/or maturation. The re-test approach to estimating reliability also suffers from the serious difficulty that only one pool of items is used on two occasions. To the extent that memory from one testing to the other leads to consistency in response, the method produces estimates of reliability which are spuriously high. This spuriousness is compounded by the fact that only a limited sample of items from all those which potentially could be used are included in any one test. Rarely are we interested in generalizing to only one particular subset of items, but would prefer instead to generalize our estimate of reliability to the broader pool of items from which this sample was presumably selected. Since exactly the same sample of items is used on both occasions, the re-test method allows no estimate of the error variance due to item sampling, again leading to inflated estimates of the reliability.

An obvious alternative to the re-use of a single pool of items would be the development of two parallel sets of items, one of which would be administered on one occasion and the parallel set administered on a second occasion. Theoretically, this approach would allow us to estimate both the effect of the passage of time as well as to estimate the sampling variability among the items. The difficulty involved in estimating reliability from parallel forms is a very practical one--the necessity of developing two complete instruments. If the researcher is using standardized tests, rather than self-made instruments, it is likely that no parallel form will be available. Therefore, desirable as they may be, parallel forms estimates of reliability are not always possible and are always done at substantial additional effort.

A third approach to the estimation of reliability involves taking a single instrument and statistically dividing it into two or more parallel forms. This procedure, referred to as split-test (odd-even) reliability, is employed when only one form of an instrument is available, and where re-test reliability would be unfeasible. The instrument is administered to the subjects on one occasion and two or more scores are obtained from the instrument (often by obtaining one score on the odd-numbered items and a second score on the even-numbered items). When the correlation between the part scores is adjusted for the fact that is based on two halves of the same test, a coefficient of reliability is obtained which estimates the sampling variability of the total set of items.

Because the test is administered on only one occasion, however, there is no way to estimate the effect of the passage of time on the reliability of the measure obtained. Furthermore, any split in the test (odd items versus even items) is made arbitrarily and if the split were to be made some other way (first vs. second half) almost certainly a different estimate of reliability would be obtained. To avoid the completely arbitrary decision about how the test should be divided, a fourth procedure for estimating psychometric reliability called internal-consistency analysis has been developed. This approach to reliability considers each item in the test as a separate parallel form. The overall estimate of reliability is conceptually equivalent to taking the average of all the correlations among individual items and pooling these individual item reliabilities to obtain an estimate of the total reliability of the test. The reader who has had some passing acquaintance with psychometrics will recognize such terms as Kuder-Richardson and the analysis of variance as techniques for obtaining such internal-consistency estimates of reliability.

It must be recognized that there is no universally best estimate of reliability. Each approach described above represents something of a compromise between what is desired and what is practical or possible. Although the topic of psychometric reliability has been relatively quiescent during the past few years, recent attention by Cronbach (1963) and others has attempted to provide a more unified conceptualization of this important property of psychometric descriptions.

Reliability of Observations

In many respects the problems of estimating the reliability of non-psychometric, data are quite similar to those just discussed. There is in observational reports, however, the additional complicating factor of the perceptiveness of the observer. The problem of accessing the reliability of observations, therefore, involves not only those concerns for reliability which face the psychometrician but also involve an entirely new set of problems concerning the perceptual training and experience (or lack of them) among the judges. In their chapter on measuring classroom behavior, Medley and Mitzel (1963) present a general design for the estimation of reliability based on the analysis of variance. This is a procedure for breaking down the total variation in a matrix of observations into those components which may be regarded as true and explained variation from those components of variance which represent error variation. Although the statistically unsophisticated reader may find the overall design presented by Medley and Mitzel difficult to follow, the following simplified illustration may be useful.

Let us assume that we have three judges rate five individuals on a five point scale. The following matrix represents the judgments which were made.

	JUDGE		
RATEE	A	B	C
1	3	4	3
2	1	2	2
3	2	1	1
4	5	5	4
5	4	3	5

We note that although the judges were not in complete agreement about their assessments of the ratees, the judgments were substantially the same with only one pair of ratings differing by as much as two points.

The reader familiar with the analysis of variance will recognize this reliability problem as a two-way classification without replication. It is possible from this analysis to obtain a statistic known as the intraclass correlation which may be interpreted in the context of this problem as the reliability of a single judge or rater (.77). It is also possible from this analysis to obtain an estimate of the pooled reliability of the three judgments combined (.91).

SOURCE	df	SS	MS
RATEES	4	25.33	6.33
RATERS	2		
ERROR	8	4.67	.58

$$r_{\text{Intraclass}} = \frac{MS_{\text{Ratees}} - MS_{\text{Error}}}{MS_{\text{Ratees}} + (J-1)\ MS_{\text{Error}}}$$

$$= \frac{6.33 - .58}{6.33 + (3-1)\ .58} = .77$$

$$\text{Rel} = \frac{MS_{\text{Ratees}} - MS_{\text{Error}}}{MS_{\text{Ratees}}}$$

$$= \frac{6.33 - .58}{6.33} = .91$$

Although ratings constitute the majority of observational data other types of observations present still different reliability concerns. The case-study method, for example, involves reliability problems comparable to those which face the historian. The causal-genetic method on the other hand raises important considerations about the longitudinal stability of observations made over long periods of time. Because of the ideosyncratic nature of case-study and causal-genetic data no attempt will be made here to do more than allude to the issue and refer the reader to a source such as Good (1963) for a more detailed consideration of the problem.

In any data, be it observational or psychometric, it is the property of reliability which allows us to distinguish our description from chance and other background variation. A description which cannot be distinguished from chance or random variation provides no confidence that on another occasion the present description of an object or event would be confirmed.

The Role of Prediction in Research

The Nature of Prediction

It has been suggested that all research begins as a descriptive effort. Seldom, however, is description the ultimate objective of the researcher. More typically description is simply regarded as a first step toward some second level objective such as prediction.

The basic function of prediction in educational research is that of identifying relationships among descriptive categories. For purposes of illustration let us consider the following trivial example.

It is our observation that in general tall persons weigh more than short persons. If we were to dichotomize the continua of height and weight into above average and below average, the following joint distribution would probably be obtained.

	.15	.35	.50	above average
WEIGHT	.35	.15	.50	below average
	.50	.50	1.00	
	below ave	above ave HEIGHT		

If weight and height were distributed in a completely random fashion we would expect to find approximately 25% of the total distribution in each cell. The fact that this is not our observation leads us to the conclusion that height and weight are not unrelated and indeed permits us to make certain probability statements. We can say, for example, that the probability that a person with above average height will also be above average in weight is about 70% = (100 /.35/.50). Conversely, the probability that a person who is above average in height will be below average in weight is only 30% = (100/.15/.50). Note that in describing this relationship no assumption has been made that height has caused increases in weight (that people weigh more because they are taller) nor is any explanation required as to why these two variables might co-vary in the fashion observed. Covariation (or correlation) is simply an empirical observation that two descriptive properties occur in certain joint combinations more often than would be expected by a random distribution of such combinations. We can, of course, extend our descriptive categories beyond dichotomies with no loss in generalizability.

Although prediction and correlation are frequently discussed simultaneously, predictions can be made using a number of statistical techniques, many of which do not require knowledge of the correlation coefficient. Broadly defined prediction is any process by which we infer the probable occurrence of joint events based upon knowledge of the prior occurrence of such combinations.

Although philosophers frequently discuss the concepts of prediction and explanation somewhat interchangeably, this is not the point of view taken by the empirical research worker. A statistical prediction requires no theoretical rationale. All that the empirical researcher requires is that the relationship between two or more descriptive categories exists in a fashion which he can distinguish from chance.

Correlation and Prediction

To estimate the relationship between two or more descriptive measures recorded as ranks, two principal methods are available, Spearman's rho statistic, and Kendall's tau. Certainly rho is the more commonly used statistic and is based on differences between the ranks assigned to individuals on two different properties. If the two variables on which the individuals are being ranked are related, then the differences which are observed between the sets of ranks will be smaller than the differences which would be obtained by a random pairing of ranks. A complete description of the Spearman rank order correlation coefficient is provided in a number of statistics books including Guilford (1965) and Siegel (1956).

The second approach to assessing the relationship between ranked data is the less familiar but potentially more useful statistic, Kendall's coefficient tau. Kendall's tau is based on a slightly different rationale, comparing the actual agreements to the maximum possible is defined as tau and may be regarded as a function of the minimum number of changes or revisions that would have to be made between neighboring ranks in order to transform one set of rankings to agree perfectly with the other. Although slightly more cumbersome than the Spearman procedure, Kendall's tau can be extended to provide estimates of the partial rank-order correlation and to the case where one wishes to consider the relationship among several rankings simultaneously. This latter case is accommodated by Kendall's coefficient of concordance W and is a useful procedure for establishing the reliability or agreement among several judges when the data consist of ranks rather than scores.

There are of course a great many other measures of relationship which have been designed to accommodate particular forms of data. The reader may recognize such terms as biserial (and point biserial) correlation as appropriate when one of the descriptive categories being considered represents a dichotomy, either real or constructed, and the other descriptive property represents a oontinuous variable. Other serial correlations such as triserial and quadraserial can be considered although are not frequently used. In the case where both descriptive properties are dichotomized one finds such measures of relationship as the tetrachoric correlation and the phi coefficient. An extension of relational statistics to the nominal scale involves an adaptation of the chi-square statistic known as the contingency coefficient. Each of these measures for dealing with noncontinuous data is described in standard statistical reference books such as Guilford (1965) and the interested reader is referred to these sources for computational details.

Unfortunately the assumption of interval scaling in the data is not the only one which is made by the product moment correlation coefficient. In addition to the above considerations this measure of relationship also assumes that the variables are linearly related. By this is meant, if we take one of the variables at successive levels (X_1, X_2, X_3) and examine the mean value of the other variable (Y) for each successive value of X, these mean values ($\bar{Y}_1$, $\bar{Y}_2$, $\bar{Y}_3$) should fall along a straight line (see Figure 1 (a)). Frequently an examination of the scatter plot between the X and Y reveals that this assumption is not justified as can be seen in Figure 1 (b).

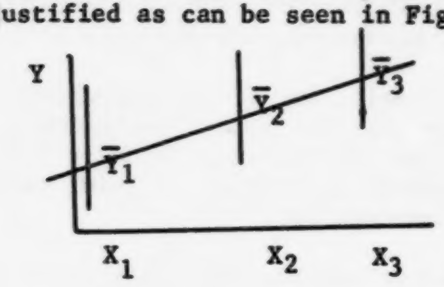

FIGURE 1 (a)

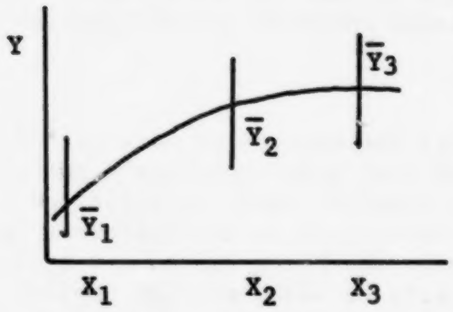

FIGURE 1 (b)

In the case where X and Y are not linearly related the usual coefficient of correlation is not an appropriate measure of the relationship between the two variables. Possible nonlinearity in relationships is a problem which is inappropriately ignored by many research workers, for if this assumption is not met by the data, highly misleading results can be obtained.

Consider a hypothetical study attempting to relate anxiety and achievement. If we plot the score combinations of X and Y for each subject we find a scattergram as follows:

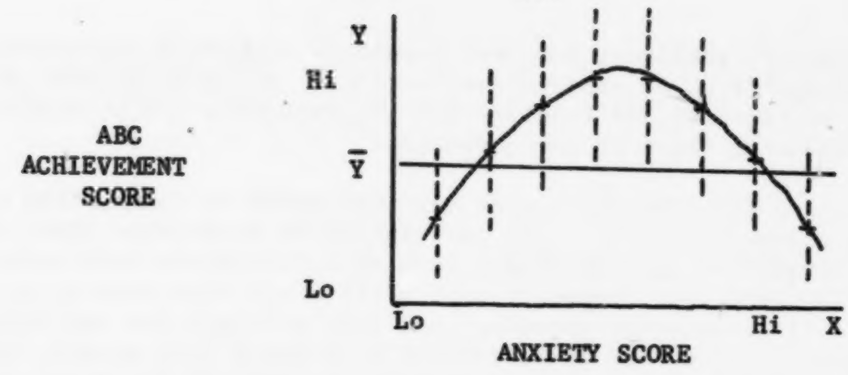

FIGURE 2

A linear correlation would show little or no relationship between X and Y because of its requirement to find a "best fitting" straight line. There obviously is no straight line which would fit the data very well, even though there is a substantial relationship between X and Y. The relationship in fact has good predictive utility if not concealed by using an inappropriate statistic.

In any problem involving a relationship between two variables the research worker will find it useful to plot a two-way scattergram of the data to satisfy himself that the relationship is linear. If it appears to the investigator that a nonlinear relationship exists he should consider a measure of relationship which does not assume linearity. such as the correlation ratio (Eta). As its name implies the correlation ratio is a ratio of the standard deviation of predicted values compared to the standard deviation of the total distribution. The standard deviation of the predicted values, the numerator of Eta, consists of deviations of the predicted values away from the general mean. The denominator of the ratio is a measure of the actual values away from the general mean. A perfect relationship would of course imply that the actual values and predicted values had similar dispersions around the general mean, yielding a correlation ratio of 1.0. The correlation ratio makes no assumption about the form of the relationship between X and Y and can be applied to the linear case as well as to the nonlinear case. In this sense the correlation ratio is a more general solution to the problem of measuring relationship than is the product moment correlation. Eta is a statistic which is frequently used in psychological research but is less often found in educational research reports.

Although indexes of relationship are important in describing the covariation between two or more descriptive properties, they may properly be regarded as descriptive statistics having no direct predictive utility. The basic process of prediction is one of assigning probabilities to certain descriptive outcomes. The choice of a statistical technique to make such probability statements depends almost entirely upon the nature of the predictor (independent) variable and of the criterion (dependent) variable. In the simplified example of height and weight used previously, probabilities of being above or below average weight were predicted on the basis of proportions of each weight category being above or below average height. A more useful example of this procedure is found in the expectancy tables used to express the predictive validity of test results. Such prediction procedures employ no sophisticated statistics, requiring only knowledge of the cell densities in the expectancy table.

In the two-variable case where the predictor variable represents a continuous descriptive property and the dependent or criterion variable is described as two or more discrete categories, one may use certain critical score statistics described by Guilford (1965, p. 380-389), or use a procedure called discriminative analysis. In the case where both the predictor and criterion are continuous descriptive properties, regression analysis provides a means of making predictions.

Multiple Correlation and Prediction

Up to this point we have only considered the case where we have one predictor and one criterion. Many research problems, however, provide a number of possible predictors which may be used individually or in various combinations. Fortunately most of the statistical techniques appropriate for dealing with two variables can be readily extended to situations involving three or more measures.

If it is our intention to correlate two or more variables in combination with a third variable, a procedure called multiple correlation is available. This procedure allows us to form a composite of two variables, such as intelligence test score and previous grades, and correlate this composite with a third variable such as college achievement. The multiple correlation procedure not only utilizes the individual correlations between each predictor and the criterion but also takes into account the intercorrelations among the predictors, thus cancelling overlap between the predictors, correlating only the independent contribution of each variable beyond the first. Technically there is no limit to the number of variables which may be considered simultaneously, although practically it is rare to find a multiple correlation in which additional variables beyond the first four or five make any significant contribution.

As was true of the simple two variable correlation, the multiple correlation is a descriptive measure not a predictive statistic. The analogous predictive procedure in the case where we have more than two variables is called multiple regression. The reader interested in a detailed discussion of procedures for conducting such analyses is referred to an intermediate-level statistics book such as Guilford (1965, pp. 392-416).

Multiple Discriminant Analysis and Prediction

In certain problems the criterion does not exist as a continuous variable, but is regarded as two or more descriptive categories. In such problems regression analysis is no longer appropriate and a procedure such as multiple discriminant analysis must be applied. Because this analysis is not commonly discussed in general statistical texts but may prove useful to researchers in art education, a brief description of the rationale will be provided here.

Multiple discriminant analysis is a procedure for comparing a combination of descriptive measures obtained from one individual with the descriptive characteristics of individuals in two or more criterion groups. In contrast with the multiple regression procedure, which results in a prediction of some specific criterion value, multiple discriminant analysis provides an estimate of the similarity of an individual's combination (of predictor variables) with other individuals who comprise the criterion groups. To the degree that membership in one of two groups is actually distinguishable, that is, that the predictors will actually discriminate between the two groups, multiple discriminant analysis will allow us to determine to which of the groups a given individual appears most similar.

To make our discussion more concrete, let us consider trying to predict spontaneous and divergent behavior of a group of art students. We have availble to us as predictors, a measure of ideational fluency (e.g., Torrance's Test of Creative Thinking) and a prior sample of each student's work (scaled from 1-9 on control of the medium). If we form a linear combination of these two predictors which maximizes the separation between the spontaneous and the divergent groups we arrive at a solution which can be described geometrically as follows.

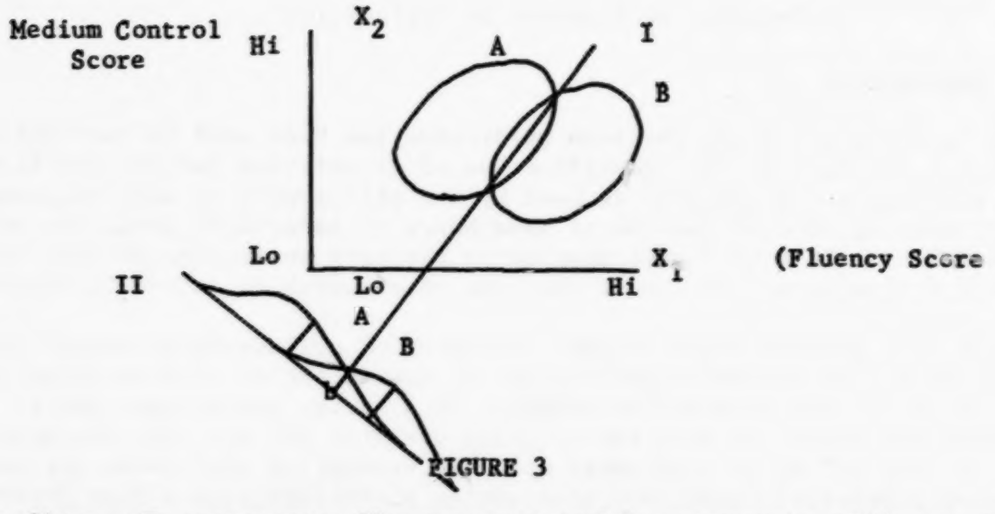

FIGURE 3

In this diagram X_1 represents fluency score and X_2 represents medium control score. Ellipse A represents the scattergram of values for the spontaneous group and ellipse B represents the scattergram for the divergent group. We can consider a line, labeled I, at the point of minimum intersection between the two ellipses and perpendicular to this line a second line, labeled II. Discriminant analysis provides a linear combination of values of X_1 and X_2 which will allow us to place each individual along the continuum labeled II. If the individual's combination falls to the left of point b then he is more similar to the spontaneous group on these two predictor variables. If his combination places him to the right of b then he has a greater similarity to the divergent group. The effectiveness of discriminant analysis in prediction is determined by the ability of the discriminant function to separate the criterion group with a minimum amount of overlap. For the reader interested in a more mathematical description of discriminant analysis, he is referred to a paper by Bryan (1951). Rulon (1951) also discusses the distinctions between discriminant and regression analysis and provides a further geometric interpretation of the discriminant function.

Canonical Correlation and Factor Analysis

To this point we have considered prediction problems in which there is a single (external) criterion and one or more predictive variables. There are, however, other classes of prediction problems, two of which we will mention in passing. One is the case where there are multiple criteria as well as multiple predictors and it is our interest to match the optimum set of predictors against a linear combination of criterion variables. This problem falls into the area of multivariate statistics known as canonical correlation. Although this approach to prediction has been recognized for many years, it has only been since the development of high speed computer programs that such analyses have become practical.

In contrast with canonical correlation which employs multiple criteria, still another class of problems employs no external criterion, using instead, a criterion measure generated from within the data. Factor analysis is an example of a procedure for analyzing data where no external criterion is available. Both canonical correlation and factor analysis have been the subject of a great deal of theoretical attention in recent years. Problems which were only conceptually possible a few years ago are now practically feasible. Although it may be a number of years before our present knowledge of multivariate techniques becomes widely applied, such procedures as covariance, discriminant analysis, canonical correlation and factor analysis will become increasingly familiar to the applied research worker. The reader interested in a relatively nonmathematical introduction to the field of multivariate analysis in the behavioral sciences is referred to the work of Cooley and Lohnes (1962).

The Role of Research in Explanation

The Nature of Explanation

Up to now in our discussion, the term prediction has been used in the very limited sense of empirical prediction, the identification of covariation and its use in making probabilistic statements. Prediction as used by the philosopher of science, however, has the broader meaning of confirmation of hypotheses or assertions about the relationships among variables. This augmented meaning of the term prediction will be incorporated into the following discussion of the role of research in scientific explanation.

Explanation is a concept which presents a number of philosophical issues not easily resolve . As long as the research worker confines his attention to describing "what is" (or has been) he is dealing with his environment on a strict operational basis. However, as he turns his attention from the question of "what is" and asks the more difficult question of "why is" he is confronted with the assumption that there are nonrandom causes or sets of antecedent conditions that can be identified with a high degree of probability. Explanation is fundamentally an attempt to relate empirical observations to a set of laws or principles which transcend the particular circumstances under which the observations were made.

It will be useful at this point to distinguish between the layman's concept of the term explanation and that used by the research worker. When a layman sets out to "explain" a phenomenon, typically what is implied is that in its natural state the phenomenon is too complex to be readily understood and that an "explanation" will translate or simplify an unfamiliar or complex observation. To a layman an explanation is offered with the purpose of facilitating understanding. Although this may be the ultimate objective of a scientific explanation, a scientific explanation does not require greater simplicity or familiarity with the terms used and often raises issues which makes the explanation appear more complex and obscure than the original observed phenomenon.

Consider the very simple observation that if we combine blue and yellow pigments we obtain a mixture which we call green. To the layman an adequate "explanation" can be effected by a description of the color wheel and allusions to complementary colors. The physicist, however, proposes a much more elaborate explanation involving principles of wave length, light propagation, and absorption which are appreciably more complex than the phenomenon itself. An explanation to the researcher is an attempt to integrate a particular fact or observation into a broader set of principles or laws. In the case of a phenomena in chemistry or physics, the theoretical framework into which this observation falls may be much more abstract than the simple observation itself.

A second distinction of a scientific explanation is that it is bound to a particular theoretical orinetation. In cases where there are conflicting theoretical points of view one will find alternative explanations for a particular phenomenon, each of which will adequately explain the observation but will do so with respect to its own theoretical framework. To the extent that two theories will adequately "explain" a phenomenon it is not possible to choose between them and it is only when one of the theories leads to conclusions which cannot be supported by observation that we can reject is as an explanation. Until such critical experiments are performed we are confronted with alternatives and unreconcilable explanations.

A further problem of explanation in research is directly related to the level of theoretical development of the discipline. In the physical sciences, where theory is well developed, it is possible to provide articulated explanations at both the macro and the micro levels. Theories in the behavioral sciences, however, are not as mature and as a consequence explanations are less well developed and more isolated in their explanatory power. Even within the behavioral sciences, however, explanations can be provided at several levels of comprehensiveness. The reader who is not acquainted with recent efforts at theory building in education will find a number of provocative ideas in Gage (1963).

Theories, Laws, and Hyoptheses

Although scholars differ in their personal interest in theory, a scientific method which is confined to description either of isolated phenomena or of previous relationships is seriously inadequate, for such a method provides no basis for generalizability to future events. Two of the most important attributes of an adequate scientific method are that it provides criteria for assessing the reasonableness of events which have been observed and that it incorporates a means of anticipating events and relationships which have not yet occurred. These are the two functions which are served by theory in research and are the means by which we free ourselves of the necessity of dealing with each empirical observation as a discrete event.

A theory can be thought of as a set of interlocking premises or statements which are internally consistent. These statements, known as laws, are usually generated from observed relationships but are not simple probability statements of the relationship between two or more facts. Instead, a law is an assertion about the nature of the relationship, not simply the probability of its occurrence. The question of which comes first, the relationship or the law, is probably an unanswerable question in any general sense. At an early point in the development of a theory, laws are formulated or "discovered" by observation and experimentation. At more advanced stages in the development of a theory, laws are anticipated or formulated deductively for phenomena which have not yet been discovered. Laws much, of course, fit observable data, at least within the limits of experimental precision but need not be restricted to phenomena which we are currently able to observe.

Laws which have not yet been confirmed by empirical observation are referred to as hypotheses. An hypothesis therefore is an assertion about the relationship between two or more facts which is subject to confirmation by experimental and deductive procedures. An hypothesis may, of course, represent an isolated assertion which is not explicitly connected with any broad theoretical framework. Although such hypotheses are subject to testing, they are generally regarded as little more than of descriptive or predictive value for they must stand alone as isolated relationships. Unfortunately because of the inadequate level of theoretical development in most behavioral sciences, a great many of the hypotheses which are investigated fall into this category and as such they are not generally regarded as a basis for explanation in the sense the word is being used here.

Logically, an explanation is analogous to the deductive conclusion if an "if, then" syllogism. Let us say, for example, that if a child is creative he will then produce nontypical solutions to a particular class of problems. A complete explication of this law would of course require that we more specifically define what is meant by such terms as child and nontypical problems. Aside from this refinement, however, let us assume that the above statement adequately expresses a law. We next provide an opportunity for a child to encounter the stimulus and observe that he produces a nontypical response. The implied conclusion (explanation) for the nontypical response is that the child is creative. Less formally we say that the reason that the child produced this unusual solution is because he is creative. If the proposed law is the only one which can explain the behavior observed then we would indeed be led to the conclusion that the explanation was adequate. Seldom is this the case, however, and with little thought we could produce a number of alternative explanations based upon other laws or premises.

This simple illustration is intended not only to describe the nature of a scientific explanation but also to underscore one of the logical problems in producing explanations. It may be, in this simple example, that children who are defined as creative on some recognized measure of creativity do in fact produce unusual solutions to certain classes of stimulus materials. On the basis of this observation we may conclude that our premise is true and that the law relating creativity and unusual problem solutions is tenible. Indeed, creativity is one of the possible explanations for the observed phenomena. It is not, however, the only explanation for this observation and in many cases, perhaps the majority, alternative explanations based on other laws or premises are available.

The Logic of Testing Hypotheses

In a manner of speaking, the testing of hypotheses in research is the process of deciding if an hypothesis may be tentatively accepted as true. To the statistically naive this approach to testing hypotheses may seem awkward, if not actually backward. The fundamental problem in testing hypotheses, however, is that one can never know the truth or falsity of an hypothesis with complete certainty. We assume, for example, that if we hold a metal object at arm's length and release it, it will fall toward the center of the earth. We believe that the law of gravity (however it is stated) is a sufficient explanation for the phenomenon that the object will drop because we have never seen an instance in which the phenomenon did not occur. We cannot know with complete certainty, however, what will happen the next time we try the experiment. An hypothesis, therefore, is never accepted except tentatively on the basis of confirming evidence. If and when we find the first piece of evidence contradicting the hypothesis, we are then led to the conclusion that the explanation must be rejected as inadequate. The process of testing an hypothesis, therefore, is one of tentative acceptance in the absence of any disconfirming evidence, or to state it another way, the task of testing hypotheses is that of finding and rejecting adequate hypotheses.

The basic question in testing an hypothesis then becomes,"Is the hypothesis or proposed law consistent with phenomena which we are able to observe?"

Consider the following decision diagram.

Hypothesis	True	Correct	Type I Error
	False	Type II Error	Correct
		Accept	Reject

Experimental Decision

FIGURE 4

Let us assume that we are called upon to make a decision regarding the probable truthfulness or falsity of some hypothesis. In some absolute sense this hypothesis is either true or it is false. We do not, of course, know whether or not our hypothesis is true or false but we do have some observational data upon which we are asked to make our decision. Along the left margin of the Figure 4 the reader will note the two conditions which can prevail; either the hypothesis is true or it is false. Along the bottom margin of the figure the two decisions which are open to us are noted; either we must accept the hypothesis as being true or we must reject the hypothesis as being false. If the available evidence leads us to accept the hypothesis, and the hypothesis in fact is true, then we have made a correct decision (as shown in the upper left corner). Conversely, if our observational data leads us to reject the hypothesis and the hypothesis is in fact false, we have also made a correct decision (as indicated in lower right corner). It is also possible, however, that our observational data would lead us to the conclusion that we should reject the hypothesis when it is in fact true. This would occur when the phenomenon we observe has a very low probability of occurring when the hypothesis is true. With such a rare observation in hand it would be logical to conclude that our hypothesis was not true and therefore reject it. In fact, however, the hypothesis is true and our observation represents a legitimate but rare event. By not recognizing this fact (and there is no basis on which such recognition could be based) we have made what the statistician refers to as a Type I error, rejecting a true hypothesis. If it is possible for us to know the probability distribution of various outcomes under the true hypothesis, we can assign the likelihood of making a Type I error to suit our convenience. The Type I error is also known as the level of significance and in many statistical tests is set at the .05 level or the .01 level. The choice of a significance level is arbitrary, however, and could be set at other values by the experimentor.

The problem of rejecting a true hypothesis is not the only possible kind of error which we might make, however. In our attempts to minimize making Type I errors we tend to be conservative, accepting the hypothesis when it may not be true in the absolute sense of the word, but where observational data are not sufficiently rare to reject it. If, in our conservatism, we accept as true an hypothesis which is in fact false, we have made what is called a Type II error. As the reader undoubtedly recognizes, Type I and Type II errors present something of a dilemma to the researcher for as he attempts to minimize one type of error, he is almost certain to increase the other. Although it is the Type I error which receives first attention in discussions of hypothesis testing, the thoughtful reader will recognize that very often the acceptance of a false hypothesis leads to consequences which are as serious as the premature rejection of a true hypothesis. One may in fact make the case that the rejection of a true hypothesis will eventually be self-righting by subsequent investigations. On the contrary, accepting a principle or law as being true when it is false can encourage premature judgments which later become much more difficult to disprove. In this writer's opinion consideration of Type II errors (or the complementary discussion of power) when referring to statistical tests is a much more important topic than the typical discussion in statistics texts suggests.

Methods of Testing Hypotheses

As was true of methods for prediction and description, a great many statistical techniques are available for testing hypotheses. Although statisticians are not in unanimous agreement concerning the importance of the distinction, statistical tests are customarily grouped into two broad categories, parametric and nonparametric techniques.

The basic distinction between parametric and nonparametric techniques revolves around the number of assumptions which must be made about the measurement scale of the data. Referring to our previous discussion of scales of measurement, variables measured on a nominal or ordinal scale are obtained either as frequency counts or rankings and technically require the use of a nonparametric analysis. Variables measured on the interval or higher scales are regarded as quantifiable and allow us to make inferences about certain population parameters.

Because nominal and ordinal data tend to be more primitive than interval data one might assume that the number of statistical techniques for analyzing such data would be very limited. In fact, however, just the opposite is the case and in many problems the difficulty faced by the researcher is not to find an appropriate analytical procedure but to know enough about alternative analyses to choose among them.

To illustrate this point, the research worker who regularly deals with nominal and ordinal measures should be familiar with such statistical tests as: chi square, the binomial test, Fisher's exact probability test, the Kolmogorov-Smirnov test, the Kruskal-Wallis test, the Mann-Whitney U test, the Median test, the Wald-Wolfowitz run test, the Sign test, the Friedman analysis of variance and the Wilcoxon ranked pairs test. Because each of these procedures is in some sense unique either in its purpose or its rationale no attempt will be made to describe the details of these procedures here. The interested reader is referred to a standard reference on nonparametric techniques such as Siegel (1956) for such detailed descriptions.

From a conceptual standpoint the analysis of interval data is greatly simplified by a powerful analytical tool called the Analysis of Variance.

Because of the great variety of situations in which the Analysis of Variance can be applied, almost all other parametric procedures can be subsumed under this general model and can be regarded as special cases. To the beginning student an introduction to the analysis of variance may seem like a formidable encounter. The basic concept on which it rests, however, is actually quite simple and contemporary researchers in any discipline will find it necessary to develop a working knowledge of this technique.

The model underlying the Analysis of Variance assumes that it is possible to describe observed results as a linear function of various experimental and error components. It is further assumed that by examining the matrix of data it is possible to make adequate estimates of the effect of each of these components and thereby decide if the estimates fall within reasonable limits. In the reliability problem discussed previously, it is assumed that an individual's rating by a group of judges is made up of three primary components. A component associated with the individual, a component associated with various judges, and a measure of error. The question answered by the Analysis of Variance is as follows: "Is the variation among the subject significantly greater than the amount of random or error variation which is observed?" If it can be shown that there is no more variation among subjects than there is random variation, then we assume that there are no true differences among the subjects. On the contrary, if the amount of variation among subjects is substantially greater than the random error observed, then we assume that there are true differences among the subjects. This is the rationale upon which the Analysis of Variance is based.

Because the Analysis of Variance can be adapted to test such a great variety of parametric hypotheses no attempt will be made to catalog them here. The reader who has little or no knowledge of this technique is referred to a beginning source such as Guilford (1965). The reader who has a basic acquaintance with the Analysis of Variance will find Hayes (1963) and Winer (1962) valuable references.

A Concluding Point of View

Although we might continue to explore other techniques and procedures for testing hypotheses, it is this writer's impression that the field of art education is not suffering from lack of such analytical tools. Rather, it is his opinion that research in art has been too "spontaneous," attempting to cover the "canvas" with broad sweeping hypotheses and explanations before an adequate background of descriptive and relational data has been obtained. This is not to be critical of the researcher who plows headlong into a highly complex area such as teaching or learning, hoping to turn up an insight or a new perspective; such bursts of energy often uncover many ideas which become the subject of more intensive study by other workers. It would be unfortunate, however, for any field to have too many "plungers," for unless research in art education is fundamentally different from any other discipline, it is the plodding accumulation of carefully obtained descriptive and predictive data that underlies any major theoretical or conceptual breakthrough. It strikes this writer that such a backlog of empirical evidence is not yet available in the visual arts and that as a consequence, a great deal more descriptive and predictive work needs to be done before it becomes useful to consider highly sophisticated techniques for testing hypotheses.

In his approach to this paper the writer has attempted to develop the premise that scholarly efforts in all disciplines follow similar lines in their attempts to bring order out of experience. To the empirical researcher or to the philosopher of science it does not matter whether one is speaking about art, or education, or chemistry; all research begins at a descriptive level, cataloging and classifying events so that they assume some pattern or order. The writer has attempted to define the basic nature of description, suggest the importance of operational definitions and define the property of reliability as it influences description.

Building on a base of reliable description the writer then attempted to show the importance of discovering stable and consistent interrelationships among the variables previously identified. It is this process which we have herein referred to as prediction. Prediction, in the empirical sense, is an extremely important phase in the development of any systematic approach to research, for it is out of consistently observed relationships that we are led to explanatory principles and laws.

Although some "dust dry empiricists" believe that it is not meaningful to move beyond the level of operational description, such a reservation seems to be unduly conservative. There is ample evidence in the sciences that theoretical speculation based upon an adequate grounding of observational and predictive relationships can provide the integrating framework which frees the research worker from dealing with each observation or event as an isolated phenomenon. Theories are intellectual prostheses which we fabricate and use until we are able to conceive of more adequate explanations. They are only as adequate as the premises or laws upon which they are based and these laws or premises are, in turn, based upon observed relationships and deductive inferences. It is the contention of this writer that if the field of art education is to develop maturity in its research, it must proceed as have all other disciplines, from a careful evaluation of its descriptive variables and a systematic study of the interrelationships among these variables. Until a discipline is able to accomplish these research objectives it is highly unlikely that it will develop the theoretical and hypothetical explanatory systems which are the ultimate goals of research in any discipline.

LIST OF REFERENCES

Bryan, J. G. (1951). "The Generalized Discriminant Function: Mathematical Foundation and Computational Routine." Harvard Educational Review, 21:2, 90-95.

Cooley, W. W. and Lohnes, P. R. (1962). Multivariate Procedures for the Behavioral Sciences, New York: Wiley.

Cronbach, L. J., Rajaratnam, N., and Gleser, G. C. (1963). "Theory of Generalizability; a Liberalization of Reliability Theory." British Journal of Statistical Psychology, 16, 137-163.

Gage, N. L. (1963). Paradigms for Research on Teaching in Handbook of Research on Teaching, Chicago: Rand McNally.

Good, C. V. (1963). Introduction to Educational Research (2nd ed.), New York: Appleton-Century-Crofts.

Guilford, J. P. (1965). Fundamental Statistics in Psychology and Education (4th ed.), New York: McGraw-Hill.

Hausman, J. (1963). Research on Teaching the Visual Arts in Handbook of Research on Teaching, Chicago: Rand McNally.

Hayes, W. L. (1963). Statistics for Psychologists, New York: Holt, Rinehart and Winston.

Medley, D. M. and Mitzel, H. E. (1963). Measuring Classroom Behavior by Systematic Observation in Handbook of Research on Teaching, Chicago: Rand McNally.

Rulon, P. J. (1951). "Distinctions Between Discriminant and Regression Analysis and a Geometric Interpretation of the Discriminant Function." Harvard Educational Review, 21, 80-90.

Siegel, S. (1956). Nonparametric Statistics for the Behavioral Sciences, New York: McGraw-Hill.

Stern, G. C. (1963). Measuring Noncognitive Variables in Research on Teaching in Handbook of Research on Teaching, Chicago: Rand McNally.

Stevens, S. S. (1959). Measurement, Psychophysics, and Utility in Churchman, C. W. and Ratoosch, P. (Ed.), Measurement: Definitions and Theories. New York: Wiley.

Winer, B. J. (1962). Statistical Principles in Experimental Design, New York: McGraw-Hill.

EXCERPTS FROM THE DISCUSSION WITH MR. LATHROP

Audience: I was real glad to hear you say -- what you said in conclusion about your sympathy for more descriptive research before we go on perhaps to more involved kinds of things because we have heard several papers which have seemed to indicate that this kind of thing isn't the most important thing right now, but that we need to go on to other kinds of things which operate on presumably already adequate descriptive information. Having proposed a somewhat descriptive enterprise, I was beginning to feel that maybe I was operating on the wrong track.

Mr. Lathrop: There are alternative approaches to research, and the rationalist would spend more time in contemplation before he began than, I sense, you or I. There is a legitimate difference as to how long one contemplates before he gets his hands wet, and I tend to be one who has a short fuse in this regard. I can speculate a long time as to whether or not something will work, but I want to find out as quickly as possible whether or not it will. So, there is a great simplicity in being an empiricist. If it works, you hang on to it; if it doesn't work, you try something else. Of course, theory is helpful in that it allows you perhaps to anticipate a lot of false starts; and even an empiricist doesn't start out completely blind, but he makes the best guess he can and then he tries.

Audience: I think your conclusions may not be as significant as did the last questionner, and I'll try to say why even though I am not sure I will be able to do this. It revolves around around the rather unique distinction you make between description and explanation. If one adopts the view of constant conjunction in which you note occurrences as they happen one after another over a period of time, you are not forced into accepting generalizations which include a cause. Now, let me see if I can make that clear. For instance, if we use the term creativity, I think you explained this to be a theoretical construct, and this construct accounts for certain kinds of behavior, now, it's strictly descriptive it seems to me, in the sense that what we are doing is just noting kinds of behavior. If we say that a student is creative, how do we check this out? We go back and we look at the kinds of behavior. If someone says, why is he creative? It would be a mistake -- or why do people perform this kind of act -- it would be a mistake to say because he is creative, to give that as the reason. It seems to me that if you jump to the second level and include in your generalization more than just noting the concept of conjunction, you are including a cause and would in turn finally lead to a Type II error that you were talking about in which you would accept the null hypothesis as being true when it is really false. I say that the cause which is included in what you termed explanation would lead to this.

Mr. Lathrop: One can deal with many of these problems on a strict empirical level and never become enmeshed in the question of explanation as I have described it here. As long as a relationship is reliable, predictable, in the sense that I have used it here, one is not compelled to move into the realm of explanation as I have defined it, although questions arise which have not been observed. What is the relationship, for example, between creativity and some other phenomenon? It seems to me that if there is no empirical evidence an explanation of the type that I described does allow you to make some conjectures which are then subject to empirical tests so that one can deal with these matters strictly on an empirical level; but the use of theory allows you to branch out, so to speak. Perhaps, some of our philosophers will want to make some observations on my unelegant explanation.

Audience: I am sure no one here has ever observed cause because I take cause to be a metaphysical category; and I don't hear the scientists say that they know the cause of something; but there is a sense in which cause is used that way, namely common sense usage. The cause of the pains in my stomach is because I am hungry. I have no trouble with that. I think what you were referring to though is cause in a second sense, that event. A causes event B. I think David Hulme made it quite clear that we don't observe this relationship.

Audience: Just out of curiosity, you identified validity with prediction, and I was just wondering why you omitted construct, concurrent, and content validity in your discussion.

Mr. Lathrop: Construct validity, for example, which is a term that has grown up in the psychometric literature, is much closer to what I would describe as explanation. Concurrent and predictive are only distinguished by a temporal variable, that is, two variables measured at the same time, then we speak of them as having concurrent validity. One is measured as an anticipation of the other. We speak of this as being predictive. That's the sense in which I used it. Content validity is, I think, a little more primitive, perhaps a little closer to the descriptive level. I find them only in the psychometric literature and wanted to broaden out a bit.

Audience: In your own work, in your own thinking, you restrict validity to the ability of scores provided through an instrument to anticipate certain kinds of consequences.

Mr. Lathrop: Yes. Being perhaps not quite so much an empricist as I have presented myself, I do entertain ideas of construct validity, but I am very hasty to put them to the test. So I rule out certain kinds of things as not having a very likely probability, and so in that sense I would be using the idea of construct validity; but my basic orientation is that something must prove that it is related before I am willing to entertain that it has validity.

Audience: In your conclusions, you seemed to bring out the viewpoint which I am sympathetic to. I want to discuss it. The "theory" that would aid the researcher was brought up out of observational and predicted relationships. There is a certain problem there because, for example, the constructs and things you are looking at in these earlier levels or kinds of research may indeed only lead to certain types of theory; in the context of a given subject or field or area of investigation. I suppose all you would say is that you would have to go back and get more constructs and things observed and measured to begin with. What impresses me here is that I have felt some of this contradiction,--not contradiction,--but tension, between theories that might come from other sources, linguistic and otherwise, and which might be useful to somebody who is really a practitioner on the empirical side of research. You are suggesting that the base is out of observations and their relationships. There are alternative suggestions, too.

Mr. Lathrop: I sensed the other day when Dale Harris presented his paper that some of the people in the group were looking for a more direct translation of the work that has been done, say in verbal learning or even in a concept formation, to problems that are confronting the art educator, and I think that that's an unfounded hope. I just don't think that psychology has ever promised that. What people in psychology have done is to define a very narrow sphere of interest, and they can tell you what they have found in that area; and they have developed some generalizations which they think work in their own circumstances. Whether or not they will work in some other area is I think only based on the idea that you believe people learn fundamentally the same way regardless of the content; but I think that is as close as one might expect to take work from another discipline and apply it to their own.

Audience: Do you really feel that art is such a separate behavior that we are borrowing too heavily from general behavior theory?

Mr. Lathrop: I personally do not, but I think many of the systems that have been developed in general learning are pretty provincial in their explanatory power and that subsequent work even in that area will allow those to be broadened and maybe in some future point they will develop a rationale and a theoretical framework which would be helpful in other disciplines; but at this point I think all they are prepared to do is to explain very narrowly what they have found.

Audience: What about the areas of personality, flexibility, etc.? Would you comment there? Might these underlie the behaviors that might be found in reaction to art or production of art?

Mr. Lathrop: My experience with such measures is that they don't even very well explain the particular circumstances in which they are being used, so I think it would be unfounded to expect them to generalize beyond a particular circumstance. Now, I don't disallow that these are important concepts and that someone may be able to translate them meaningfully. You see, what they have done is taken an idea and translated it into some operational terms. Those may not be at all appropriate in your field. The concept still may be a good one.

Audience: They seem to vary with different studies.

Mr. Lathrop: Yes. The point I wanted to make was you should be able to look at the study and find out how he used the term. Whether or not you want to use it that way is up tc you.

Audience: Very recently, a book *An Inventory of Scientific Findings in Behavioral Sciences* was published. Are you familiar with the book? It seems as if in some quarters the book will be received and made use of. I would be interested in your evaluation of the merits of relying on such an inventory in projecting or inventing hypotheses.

Mr. Lathrop: I think you have chosen a good word. What you are asking for is one man's opinion, and that I am happy to provide. It seems to me that what Berelson has done is try to translate a very complicated field into terms which would be understandable to almost any layman, at least any reasonably educated layman. In a sense they have done a considerable amount of violence to the specificity which has gone with each of these studies. Were any critical reader to go back to the original research reports and try and associate them with what Berelson and Steiner said, he would have to do it with a great deal of tongue in cheek. They have attempted a herculean task and I guess maybe one which would be best described as trying to provide some ideas as to what the psychologist is up to for the general public; but as a basis for generating research level hypotheses, I would cast serious doubt upon it.

Audience: Given what I believe to be an agreement between you and June McFee regarding the lack of clarity in description in these linguistic areas, I would hope that we in art education might take advantage of this to the extent that we would sharpen the descriptions in terms of our field but by the same token be very careful consequently not to accept all from these other fields as "gospel".

Mr. Lathrop: It strikes me that some people have a very low threshold to ambiguity and they want to try to fit empirical observations into neat packages and I think there is great danger in trying to do this prematurely. I think we ought to be willing to allow things to sort of hang in suspended animation and be willing to entertain methods and procedures which sort of sit out here by themselves and eventually as we get enough of these someone will come along like a Newton or someone and fit these pieces together. The thing is that the analogy that I prefer to use, is that of the archaeologist digging up a piece of broken pottery. Now, not all of the pieces are there, so what he has to do is to fill in between the existing pieces. Now, if he puts in too much cement to hold this thing together, he might end up with something that didn't look much like the original pot. One of the problems for some people in research is that they want to get a finished pot too soon rather than jus letting the pieces lay around on the table for a while until they dig up some more.

Audience: In regard to special problems that we have, that we are trying to achieve, that we can't describe in the sense of having criteria, in being very specific, in that we have open-ended tasks, and because we are concerned with learning rather than the description of a single task, I am wondering if you can talk about what things you keep in mind. We are trying to do something that maybe, like a look at learning in terms of tasks which we want to keep open.

Mr. Lathrop: I'm not sure I know just what you are asking for.

Audience: As I listened to your paper, I think, "well, this is fine". But we don't have any good measurement for learning. The student's not trying for an answer that we have ahead of time, in mind, which he should have.

Mr. Lathrop: I guess maybe I wouldn't agree with your premise that we need to have an idea ahead of time. Very often what I am disposed to do with problems in my own area is to spend a lot of time watching people at the task before I begin to think about what I might want to measure, and I may try a number of things which just don't work at all, psychometrically. For me, this is sufficient reason to abandon that particular measure, at least for the moment. I am not disposed to start out with a very clear idea of what it is I am looking for. What I am likely to do is rule out certain possibilities as being unfeasible at the moment and then gather a variety of data and see which of them look promising. I may not be able to explain what I have and neither may the subject be able to tell me what he has done. That's not important as long as I can observe it realiably. I don't have to know verbally what he has done and he doesn't have to know verbally what he has done. All I would require is that I be able to observe some kind of a discrimination among people which is reliable.

Audience: There has been in the past a number of researchers, or some research at least, done by individual people in the area of art education, fairly isolated, although there was some communication. Now I have a sense that art educators are interested in doing team research,or as what has been described as curriculum-center research. Now, my question to you would be this: Do you think we might get more out of individual research or center research? The reason I raise the question is that when you have center research usually there is a more or less common goal or fairly common direction; whereas, when you have individual research you might have quite diverse and independent thinking and theories behind the tests.

Mr. Lathrop: I can give you a kind of non-helpful answer in that some people like to work in groups. Some people like to work individually; but more to the point of your question, if I'm working in an area where I'm not at all sure which direction things are going to go, I like to work alone, because I very often find the group taking a direction I'm not yet ready to go. Once the direction of a certain piece of research is started, there is a certain compulsion to get closure on it and get it finished. I may want to sit down and decide, before I put a lot of effort in some direction, that's really the way I think it ought to go. Not everyone feels that way, and so I think that what I sense is that anything that this group can do to get people going in research collectively and individually is going to help the field. I wouldn't be as concerned at this point as to whether or not they do it in centers or do it individually. I think if a problem is broadly focused, a center can make a big contribution, but I don't think that that's my own personal bias; I don't sense that the problems in art education that are researchable are that yet clearly focused.

Audience: I don't think you commented very much on the selection of the unit of measurement. Recently, we have been examining the responses of a lot of children in several countries to given works of literature, translated where necessary, and it was difficult for us to decide what we were going to look at, so we decided to look at one sentence at a time, or what somebody finally called a syntacteme because a lot of kids don't put periods at the end of sentences. I suppose if one wanted to look at the responses to an art object and the responses were verbal, it might be used as a unit. What exists in the way of knowledge about units to look at, units for observation in the field of art or art education?

Mr. Lathrop: Your last phrase ruled out my answering because I don't know what research has been done, what scaling research, has been done in art education. There is a methodological controversy about the importance of the distinction between parametric and nonparametric data, much of this has been washed out by empirical studies on statistical procedures. It used to be felt by many people that if your data are treated as ranks, for example, you must consider them as ordinal data and do nothing with them which would violate this assumption of rank order. It has since been shown that many statistical procedures are robust enough to compensate for that, so that if you do an analysis of variance on ranks and you do an analysis of variance on comparable, qualitative data, you end up with almost indistinguishable results; so that the scale of measurement I would say is principally dependent upon one which will give you a range, and that's leading to reliabilities, and observations are made about the problem of spreading the scores out in order to get reliability. That would be my general answer to your question. Whatever metric was useful in spreading the scores out.

Audience: If I may cite a reference for the sake of those who don't know it, C.W.Valentine's "The Experimental Psychology of Beauty". This is a summary of fifty years in research on children's responses to beauty in pictures, and many of the studies I think might be worth replicating for new concerns in art education. They are available through Dover publications.

Audience: I want to make just a couple of comments of some things that were mentioned in that last part. On this matter of how you team up to do research. I think if you try to get the group of colleagues who already have their doctor's degrees together you find you are engaged in an almost insuperable problem of corralling them on one idea that they are all willing to follow. You attempt, for example, to do the spade work involved in getting an R and D center proposal together, you run into this difficulty, in a way that drives you back from it;

but if you will turn a good person loose to do work that he is prepared to do and is interested in doing and let him have enough money to buy some students to help him, you can get what amounts to group research under the aegis of one good mind that knows where it is going, and this might turn out to be very much more profitable than trying to build colleagues into teams. The second thing I wanted to say, going back to the question that I believe Bob Burkhart raised, "Can you make decisions on the basis of research findings that are not full grown yet?" Here you are going to constantly have a conflict between the researcher who wants to wait until all the findings are in and the program operator who has to make decisions without waiting. My information would be to say that the program operator had better have what help there is available even though it is fragmentary than to have to go along without any help at all, if he is going to have to make a decision. So, I would like to see us learn how to live somewhere between these two positions.

Audience: I notice you interpolated some statements about measurement not being dependent on verbal constructs; yet, to be a strict empiricist we would not have to have any verbal labels on all the things we have learned. I think we are overlooking this potential in research; you can point to the darn thing, without any name on it, if you can identify it in repeated samples, etc. These techniques are still adequate, whether we have a linguistic backing or not for them at this point. I think this has not been looked at at all. I know from talking just yesterday to about four or five people, there were what they were calling non-discursive measurements for want of a better name, we don't know what to call them, maybe iconic, visual, or whatever, that they could put no labels on at this point. Maybe it is wrong to put verbal labels on these things until we can in a sense see how they operate more.

Mr. Lathrop: The psychologist probably is as bad as anyone in wanting to attach labels; but as you point out, there is no fundamental reason why we need to. The thing that is bad about labels is that once you coin a label, then you begin to believe in its reality. Of course, these labels just exist as you defined them; and they have no reality apart from the way in which you obtain them. They have none until you demonstrate that they have. They are all hypothetical constructs and we don't need any verbal labels unless you -- I'll just leave it there.

Audience: On this point of the robustness of parametric statistical analyses, I know of the Lindquist one on analysis of variance. Is there something in your bibliography here that discusses even more recent ideas about this that you can suggest?

Mr. Lathrop: No, but if you are interested in this matter, I can dig up a couple of things that have occurred within the last five years.

Audience: In connection with the distinction between parametric and non-parametric method, I was wondering if you know of any psychometric tests which have an interval scale?

Mr. Lathrop: No.

Audience: Neither do I. That's why I asked.

Mr. Lathrop: Strictly speaking as I mentioned in the paper, one would conservatively rate all of these on the ordinal scale; and it is only through certain assumptions, transformations, which we make on the scores which allows us to use interval statistics. The unnerving thing is that the concern about that problem leads you to a lot of extra work which you later demonstrate wasn't very important, anyway.

EDUCATIONAL INNOVATION AND ART EDUCATION

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While the literature of curriculum development is a generation old, attention to innovation in education is a new area for research and speculation. Only very recently has innovation in education become the object of systematic thought.[1] Slender as it is, the body of work in this new field has already challenged at its roots those assumptions of the last thirty years which were developed after the work of Caswell and others. It was they who made the distinction between curriculum and curriculum development and gave the latter their sustained interest.

It is probably worth noting that, just as the first curriculum developers distinquished between a written curriculum and the action based on it, we shall distinguish here between a curriculum proposal and a curriculum innovation. It is one thing to propose, another to innovate - or to act. It is the latter that concerns us here.

I shall in this paper trace briefly the thinking about curriculum development that has gone on since the mid-Thirties. Then I shall state several generalizations that seem to characterize contemporary thinking about educational innovation and proceed to offer the resolution between the two kinds of thinking that seems to me to be called for. As will become apparent, some contemporary thinking about educational innovation appears to be incompatible with the ideas and beliefs of the curriculum developers of the generation since the mid-Thirties.

The reason that the leading educationists of the mid-Thirties made the distinction between curriculum and curriculum development was that they had witnessed a series of substantial changes in both the content and the organization of education during the preceding fifteen years. The testing movement, under development after 1900, came into full flower during the early Twenties. It joined forces at that time with the time and motion studies in business, - which resulted in the proliferation of the "efficiency experts." This coalition resulted in a highly optimistic re-examination of the nature and content of the curriculum. The 1925 Yearbook of the Department of Superintendence of the National Education Association asserted that all of the problems of teaching and learning could be resolved into the concepts of nature and nurture. Since, by means of standardized tests, it was possible to determine objectively both the success of teaching and the nature of the child to be taught, it remained only to experiment with various forms of educational nurture and the grand solutions to the problems of education would be at hand.

This view led to the establishment in many school systems of large-scale curriculum reforms, typically involving the establishment of committees of teachers working with university consultants, the publication of detailed courses of study, and the appraisal of the whole by means of objective achievement tests. The entire strategy of curriculum innovation depended on the idea that it was possible to state the objectives of any given line of activity in a detailed and unbiased fashion, and that standardized tests offered both the statement of such objectives and the means to assess them. Accordingly, more and more detailed analyses of these objectives were carried on. Perhaps the tendency was best exemplified by the work of W. W. Charters, who "shredded out" all teaching into a thousand and one acts, presumably thus making it possible to put these together in new combinations to fit new objectives.

The striking thing about this movement was its complete and utter collapse. The detailed courses of study, prepared at such great cost, gathered dust on the teachers' shelves. The standardized tests, instead of being used to develop sensitive analyses of the nature and educational needs of children, were used to appraise whole school systems on an economic basis. Teachers, and teacher preparing institutions, turned away from the approach of the Twenties to a "child development" approach, which took the schools to be instruments for "maximizing the individual potential" (such an ugly phrase!) of each child.

All this happened in a context of cataclysmic political events. The depression, the emergence of fascist dictatorships, and the onset of the way produced a basic change in our general social ideology, so that by 1940 the judgment of the educationists was that the curriculum innovations of the last twenties had failed because they were imposed on the mass of teachers from the top of the educational hierarchy, and that in this sense the schools were acting in a dictatorial, not a democratic fashion.

It was in this context that the post-1935 generation of curriculum developers came to certain conclusions. Chief among these was that curriculum development must be based on the assumption that classroom teachers are both well motivated and intelligent enough to conceive of and execute improvements in the curriculum. The operational principle that follows from such an assumption is, of course, democratic in the formal sense - innovation by consent. Committees of teachers once more began to form (still working with consultants) to make proposals for improvement in the school system. However, the consultants more typically came from within the school system than outside of it, since the new post of "curriculum director" or "curriculum consultant" had been created in a large number of school systems. By 1943, the old department of supervision of the NEA had combined with the Society of Curriculum Study to form the new Association for Supervisors and Curriculum Development, which gave this new impulse an organizational expression.

Foremost among this group's beliefs was that the curriculum should not longer come from the top down and the outside in. It should come from the bottom up. No curriculum change was to be expected if the teachers who were to carry it out were not involved in making the decision that it should be attempted. The key term came to be "involvement." In-service education projects multiplied; the most effective of these was the Maryland Child Study Program, which provided the means for teachers on the job to study the emotional and social development of children at close range and with relatively sophisticated tools.

Given the public temper, it was not surprising that most of the in-service work done by teachers during the period between 1940 and 1955 had to do with the social and emotional development of children and the social climate of the classroom. The defense of democracy by means of war had its counterpart in the classroom where the teacher defended democracy by inducing a "democratic" classroom atmosphere, along the line suggested by the German refugee Kurt Lewin, himself a victim of the Nazi tyranny. The number of detailed courses of study published after 1935 dropped drastically, until during the war very few were published at all. What took their place were publications typically called "Curriculum Guides" which replaced the detailed prescriptions of the former courses of study with more generalized statements of the goals of education, together with resource material of various kinds. Certainly, by 1950, the curriculum developer considered the teacher as a free agent, and his own role as a guide, counselor, and friend. The term "supervisor" became unpopular. The people formerly called by this title preferred to call call themselves "curriculum consultants." Books and journal articles on the role of the consultant appeared with increasing frequency, and achieved wide acceptance.

By 1950, the following generalizations about the nature of curriculum development had achieved wide acceptance: (1) Curriculum development proceeds from the teacher up through the system, not from the administration down. (2) The best administrative unit for curriculum development is the school building, not the school system. (3) Curriculum development may be expected to proceed on a "broken front," with considerable differences between school buildings. (4) The teacher's attitude toward children is likely to govern the kinds of instruction she offers, and especially the climate within which it is offered. (5) The social-emotional climate of the classroom is the principal determiner of the success of instructional efforts. Frightened children don't learn. (6) Curriculum development, in the final analysis, is a highly personal affair which depends on the perceptions and attitudes of the people involved.

One of the best expressions of this point of view - a point of view still very widely held - is in Supervision for Better Schools, The Role of the Official Leader in Program Development, by Kimball Wiles (first published 1950, revised twice since). Mr. Wiles identifies the primary skills of supervision as skills in leadership, in human relations, in the group process, in personnel administration, and in evaluation. The term "supervisor" he takes to be the name of a role undertaken by people in a school system, not the name of a position. Reflecting accurately the two decades of experience before the first publication of the book, he places skill and human relations at the center of the work of the supervisor. Correctly reflecting the opinion of the most successful innovators of the time, he places at the center of the supervisor's array of values a wholesome respect for the ability of the individual teacher to innovate.

Wiles' conception of innovation: one which begins with the school teacher, and makes all of the rest of the system serve the teacher's needs, and which takes the teachers preceptions and attitudes to be the key to actual innovation, leads an innovator to view with awe the teacher he would be helpful to. If, however, one wishes actually to bring about a change in a classroom, I myself will testify that such an attitude is required. The apparent alternative, which calls upon the teacher to execute ideas that have been developed somewhere else, seems to treat the teacher with disrespect, to drive imaginative people out of teaching, and to provoke resistance.

This series of ideas - the core of beliefs that has sustained curriculum development for more than twenty years - has never been subjected to systematic criticism. It has, however, sustained thousands of directors of curriculum, supervisors, and others who seek to bring about improvement in instruction. During the past decade it has come under a certain kind of criticism - less systematic than stereotypic. The criticism is that in its overwhelming concern with the teacher's morale, it has functioned in such a way as to inhibit desirable changes. The function of the school, such people often comment, is not to make the teachers comfortable, but to educate students.

The curriculum development doctrine I have described above is ridiculed by some because it seems to confuse teacher morale with student achievement. It is not my purpose here to join in this ridicule; the practices that have grown up around this set of principles are very far from being ridiculous. They account for more constructive changes in the schools than the loudest of the contemporary critics can imagine. However, I wish to throw them in contrast with certain ideas that have come from other sources in the intellectual community, and which, to say the least, seem plausible and even powerful.

Since the advent of the drastic changes in American educational thinking since 1955, an increasing number of observers have become interested in the process of educational change itself. These people are not descendents of an earlier group of curriculum developers; they come from inside the establishment, for the greater part, but they have not been associated with any of the leaders of curriculum reform and development of the Thirties and Forties. From their writings and pronouncements one may deduce certain generalizations. I wish to state and discuss these.

1. Educational innovation arises primarily from competition and imitation. When Henry M. Brickell, Assistant Superintendent of Schools in Manhasset, Long Island, spent a year asking school officials in the State of New York where they got their new ideas, the typical answer was, "next door." Actual innovation, as distinguished from proposals and polemics, spread from one school district to another according to propinquity, and the

dynamic that made them spread was competition for local public favor. Brickell concluded that the best way to improve the schools was to locate the generation of ideas outside of the local school system, then to provide local demonstration centers that would function as stimulators of competition and imitation.

2. Educational innovation proceeds from the outside in and from the top down. When Daniel Griffiths applied to education the theory that had been developed to explain organizational behavior in government, business, and the military, he concluded that the local schools had to be viewed as a system, and that what was true of other systems is also true of education. Any system, he pointed out,[2] seeks to maintain its equilibrium, it resists any force that threatens to change it. Moreover, the school system, like other social systems, is hierarchical. It follows that changes can flow down through the system very much more easily than they can flow up through it. The combination of these two characteristics make in unlikely that fundamental changes can originate within the system and "come up." It is much more likely that fundamental changes will come from outside the system -- in what Griffiths calls the "supra-system" in which the school exists -- and be introduced through the top of the hierarchy. Griffiths elaborates on this general notion in a series of propositions (pp. 431-5):

a. The major impetus for change in organizations is from the outside.
b. The degree and duration of change is directly proportional to the intensity of the stimulus from the supra-system.
c. Change in an organization is more probable if the successor to the chief administrator is from outside the organization, than if he is from inside the organization.
d. "Living systems respond to continuously increasing stress first by a lag in response, then by an over-compensatory response, and finally by catastrophic collapse of the system" (quoted by Griffiths from J. G. Miller, "Toward a general theory for the behavioral sciences," American Psychologist, 1955, Vol. 10, pp. 513-31).
e. The number of innovations is inversely proportional to the tenure of the chief administrator.
f. The more hierarchical the structure of an organization, the less the possibility of change.
g. When change in an organization does occur, it will tend to occur from the top down, not from the bottom up.
h. The more functional the dynamic interplay of sub-systems, the less the change in an organization.

It does not do justice to Mr. Griffiths' argument to repeat his propositions here without the supporting material; those who wish may consult his original statement. It is, perhaps, necessary to explain that the "dynamic interplay of sub-systems" of proposition 3 refers to such organizations within a school system as the school principals, the teachers of science, or art, or whatever; the school building faculties, and the like. Where these organizations are lively and in contact with one another, Dean Griffiths points out, innovation is less likely to take place.

3. Educational innovation involves the alienation of the innovator, who acts as a "true believer." This idea is based on certain notions of Professor Matthew Miles and of the remarkable lay philosopher, Erik Hoffer of San Francisco. If any system seeks to maintain itself, anyone within it who seeks to change it must act like an outsider for he will surely be treated as one. The feeling of alienation is familiar, certainly, to school supervisors whose task it is to produce improvement in the instructional program. The frequent tension between school supervisors and school building principals, for example, could be accounted for by this idea; the primary task of the school principal is to make the system work; the primary task of the school supervisor is to change it; they must inevitably collide upon occasion. Hoffer's "true believer" is a zealot; one who seeks to change things drastically through the literal application of a moral ideal. Since he, too, must alienate himself from that which he would change, yet, being human and gregarious, needs some kind of reference group, he forms his own. He may adopt some distinctive costume or prop (green cloth bag, beard, distinctive spectacles, exotic car,

ostentatious display of an avant-garde periodical, etc.) or he may merely seek association with his own kind, forming small organizations which immediately splinter on doctrinal matters. The "true believer" exists by virtue of the Philistinism of the great world, the Establishment, the system to be improved. In education now, several reform movements have sprung up; one of the most recent seeks status as an exclusive elite -- but it excludes certain able educators for doctrinaire reasons: it is difficult for the non-initiated to tell the educational academician from the Fauves.

4. Educational innovation depends on the alignment of forces largely external to the school. Gordon Mackenzie has explained in several places how he thinks the politics of curriculum change must function. His point supports Griffiths' first proposition -- that educational change is more likely to come from outside the organization than from within it. What Mackenzie has done is to indicate in some detail how the external forces may be manipulated, or (alternatively) sensed, in such a way as to make change possible. In general, the more external forces go in the same direction, the more likely it is that a change in that direction will take hold. What are these forces? In a local school system, they are the civic officials, the press, the influential business and labor leaders, sometimes the clergy, often various social groups and service clubs. Each community, of course, has its own configuration of such community forces. If one desires a change, it is necessary to persuade these people that the change in desirable. To do this is to do no more than anyone in a community must do, to gain community support for a change. However, elementary as such stratagems are, and ethical as they usually are, school officials have seldom made effective use of them for anything beyond the fiscal needs of the schools. From Mackenzie's point of view the National Defense Education Act, for example, functioned as a potent external force, which compelled attention to the needs for foreign language instruction, science, and mathematics. The passage of this Act was itself a political response to a number of external forces that suddenly became aligned when Sputnik went up. The biases of that Act, only now being corrected, probably reflected fairly accurately the alignment of such forces at the time of its passage, in 1958.

Now, these four generalizations, while they do not exhaust what has been said recently about the nature of the educational organization and the possibility of innovation, nevertheless are a severe challenge to what we have assumed about curriculum development. Before we discuss their adequacy, let us once more consider some of the litany of curriculum development as we have known it, this time quoted from the Association for Supervision and Curriculum Development (Assessing and Using Curriculum Content, December 1964, p. 8).

> School systems should involve in decisions all staff members who will be directly affected by a major change. School personnel must be prepared to work with "new publics," to listen as well as to tell . . .
>
> School Board policy should encourage examination of ideas or programs stemming from external or internal sources . . .
>
> Community attitudes toward a new program should be studied.

The above might have been written by an ASCD commission at any time since 1940. However, certain other elements of the ASCD rules for curriculum change could not have been written before 1958:

> The budget must include adequate provision for in-service activities necessitated by change.
>
> In-service work for staff members must be designed, not along traditional lines, but in terms of new projects and new approaches.

I quote these recent statements in order to begin our reflection on the four ideas about innovation stated earlier. The spirit of the two sets of statements is, of course, opposed. Yet no experienced schoolman would deny that both sets of statements deal with truth. How can this be?

I should like to suggest that these statements about innovation -- it arises from competition, it comes from the outside in and the top down, it involves alienation of the innovator, it depends on an alignment of external forces -- all describe the real situation, and the usual situation, when no intelligence is at work. That is, these observations explain the usual unaware behavior of people at work in organizations. When no one has enough perspective on the work of a school system to perceive its behavior as an organization, it will work in just the fashion Griffiths predicts. When the people in an organization are not expected to act with discretion, they will, of course, act like bureaucrats. When school supervisors don't recognize in themselves the fact of occupational alienation, they may well proceed to become True Believers -- or to cease their attempts to innovate.

The view of innovation represented by these statements, then, presumes that the dynamics of school systems and their supra-systems run wild and ungoverned. If these dynamics are indeed governable, and they usually appear so, then the thoughtful introduction of change is impossible. Change will take place, but it will be as often irrational as rational. Organizations, given this view, are as often monstrous as helpful; one is bound to be cynical about them.

The strength and appropriateness of this view is verified whenever one recognizes reality in these schematic propositions. The reader may verify them from his own experience. However, they don't account for all organizations. Some of the very largest organizations, such as the Army or General Motors, have repeatedly shown that they can change from the inside. Indeed, it is just this ability to adapt and change from the inside that accounts for their survival. Similarly, there are school systems -- usually not the biggest, or the poorest -- where innovation has apparently taken place from the inside.

On the other hand, there are "outside" innovations that don't take. Consider, for example, the failure of the Council for Basic Education really to change the quality of education -- a failure that is all the more evident when it is thrown into contrast with the success of the Physical Sciences Study Committee -- the well-known PSSC Physics program. Contrast the mediocre success of educational television, despite the biggest single-focus financial effort ever undertaken in American education, with the complete reform in the teaching of reading that took place during the Twenties, or the introduction of child study during the Forties, or the introduction and wide adoption of standardized tests during the early Thirties, or the widespread reform in the teaching of art in the elementary grades during the Twenties and Thirties. Again, contrast all of these successes with the failure of educational radio to spread, or the failure of sound recordings, or the failure of 16mm film to live up to its promise. How is it that one promising educational innovation takes hold, and another does not, given comparable effort and time?

Perhaps the most reasonable and adequate answer has been implied by Matthew Miles. Miles suggests that the success of an innovation may well depend on the adequacy of the strategy of innovation employed by its proponents.

Miles' basic point is that the strategy of innovation has to be comprehensive, if the new proposal is actually to become part of the "target system." By "comprehensive," Miles means that the innovation must be (a) carefully designed, (b) include provision for local awareness and interest, (c) provide for local evaluation of the proposed innovation (including a pilot trial), and (d) provide the conditions necessary for extensive local trial and adoption.

So viewed, the efforts of the Council for Basic Education can be seen as a single-cell strategy without adequate comprehensiveness. The Council has ordinarily not designed its proposals with care; it has focused on Miles' "local awareness-interest."

The effect of such a focus is to create a great deal of anxiety, perhaps to dislodge some local school officials, but not to produce much real change. The mediocre success of educational TV can be explained, given Miles' view, as arising from the incompleteness of the design and the failure to provide for local adoption. The incompleteness of the design, in the case of ETV, is well illustrated by the postponement of the decisions on what to broadcast until three months before air time, in the Midwest Airborne TV Project, with the result that the programs as broadcast were intolerably uneven in quality. The incompleteness of the "local trial" element is obvious in the case of ETV, since teachers were not in any important way either trained to use the innovation wisely, nor was the innovation itself designed to be used by a teacher -- it was to teach the children, to make the local teacher supplementary.

The success of the PSSC Physics Project, on the other hand, illustrates rather well the nature of a comprehensive strategy of change. All of the elements are present: the careful, painstaking design of the new course, the use of mass media and professional media to create local awareness and interest, the provision of materials of all necessary kinds, the elaborate in-service training of the prospective teachers as conditions to permit local trial. The project provided little help toward local evaluation, and where it has been tried and dropped, as it has in some high schools, presumably this oversight accounts for its failure.

With our minds on the need for comprehensive strategies, let us once more examine the series of guide lines in the ASCD pamphlet cited earlier. Here are the guide lines, reproduced completely:

> School systems should involve in decisions all staff members who will be directly affected by a major change.
>
> School personnel must be prepared to work with "new publics," to listen as well as to tell.
>
> School personnel must recognize that curriculum changes move through phases and school people must know where they are on the continuum of change.
>
> Administrative arrangements must be designed to support change.
>
> School board policy should encourage examination of ideas or programs stemming from external or internal sources.
>
> The budget must include adequate provision for in-service activities necessitated by change.
>
> The assistance of staff members from the state department of education, from the universities, and from colleges should be sought.
>
> Community attitudes toward a new program should be studied.
>
> In-service work for staff members must be designed, not along traditional lines, but in terms of new projects and new approaches.
>
> Preservice education of teachers should be jointly considered by employing school systems and teacher preparation institutions.

These guide lines, considered in Professor Miles' framework, do rather well in providing for local evaluation, local awareness and interest, and local trial. It is interesting that they say almost nothing about the generation of new proposals; they presume that new proposals have somehow already come into being. Viewed cynically, here is a group of bureaucrats preparing the system to accept change from outside, or from the inside when the insider has acted like an outsider and has alienated himself temporarily, as I have already indicated.

Where are new ideas to be generated? More importantly, what new ideas are to be generated? From the ASCD point of view, it doesn't matter where they come from -- it matters only that the system be preapred to receive them. This point of view, while generous and open, doesn't adequately take into account the fact that any system must either be self-regenerating, or undergo periodic "catastrophic collapse," in the words of J. G. Miller. There is, in the examples from the military, government, industry, and some school systems, an alternative.

Little has been written of a scholarly sort on the mechanisms such organizations use to insure regeneration from the inside. There are some anecdotes, and some accounts in the popular press. Presumably, for example, the military constantly revises its strategies and basic assumptions, given the pragmatic test of battle. Similarly, corporations modify their operations, sometimes basically, given the pragmatic test of competition in the marketplace. It is said that one of the vice presidents at Minneapolis-Honeywell celebrates the birth of each new idea in his division with a special luncheon--before the question of the practical value of the new idea has been raised--in order to emphasize the necessity in the firm for a constant flow of new ideas. But business and the military have frequent feedback on their success. Schools don't.

Given the hierarchical nature of the school system, and the lack of immediate feedback on its success, perhaps the difference between the non-innovative majority of the schools and the innovative minority lies in the attitude toward innovation of the chief administrator. It seems apparent that in the smaller school systems where most innovation takes place, the administrator ordinarily shows such an attitude. Probably because of the smaller size of such systems, his attitude can be more immediately communicated to the staff than would be likely in larger systems. Certainly, the official at the top of the power structure in any organization is, among other things, the one in charge of the official reward system. What he rewards, goes.

There is more than this involved, however -- at least in the accumulated experience of school people. In addition to a benign attitude toward new things, some skill is required. Here is some hard-won common sense, based on such experience:

1. No innovation exists if a teacher can't do it.
2. Training and familiarity have to precede evaluation.
3. Pilot trials require as much preparation as large-scale trials.
4. A universal floor under the quality of educational practice can be established and maintained. Universal practice cannot be. Beware lest the floor appear to represent your aspiration -- don't let the floor become the ceiling.
5. Invention will reliably proceed from understanding.

These common sense principles arise from an underlying conviction in the school systems where innovation takes place: the conviction is that people generally mean well, are essentially rational, and seek to preserve self-respect. The solution in principle, then, to the problem of building a self-regenerating school system, can be stated quite briefly. A self-regenerating school system must have an administrator who assumes that the school staff consists overwhelmingly of people who mean well, intend to be rational, and are as self-respecting as the system allows them to be. He has to see to it that novel ideas are consistently awarded in ways congruent with these convictions. Novel ideas, to become innovations (and we assume here that no innovation exists until it has "taken hold" -- which is to say, no innovation exists until it exists) have to be carried forward through a comprehensive strategy in which all the elements are executed with care and thoroughness. Where these conditions are met, one has a self-regenerating system.

It will be noted that this summary statement says noting about money. It is not intended that it should; too many schools have innovated successfully without large amounts of money to make any such generalization hold. Professor Mort, for all his brilliance, never seemed to have realized that the important findings were on the edges of his data. The commonplace finding that educational quality is a function of cost was always prejudicial to the researcher; it kept him from paying close attention to the exceptions. Springfield, Missouri, was an innovative school system during the long tenure of its great superintendent, Harry P. Study, despite the fact that it was always a relatively poor system financially. Sixty years ago, the San Francisco Normal School was a center of educational innovation, despite what we would say now were nearly impossible fiscal conditions. Winnetka was an innovating school system when Washburne was there. Nobody has asked in meaningful terms how this could be; the custom is to mutter "charisma, " or some other incantation, and to dismiss this cluster of cases as if each were unique.

The concept of a comprehensive strategy in a climate of self-respect explains a good deal of this "charisma." The men at the head of these schools were, of course, charismatic. But to say this overlooks what they did -- what made up their leadership style.

Frederick Burke, I am told, was somewhat patrician in manner while he was president of San Francisco Normal School. More important, he had a detailed knowledge of the teachers and students at the school, and was full of praise or scorn for them, depending on what they did. That is, he attended closely to the reward system. Harry Study was apparently benign; what he communicated was a passionate concern for the welfare of the children and their teachers; nothing was too good for them; he was full of curiosity about new things in education. In other words, he constantly reinforced the point that innovation was legitimate. It seems evident that knowledge about innovation can be gathered and contemplated and that it defeats our purpose to hide behind indirect explanations of excellence in school, whether these explanations refer the problem back to financial support or charismatic leaders. Rational planning is possible, given the right assumptions.

From all of this I turn to art. I shall not, in this paper, attempt to discuss new art programs; that will be done by others closer to the field than I. However, I should like here to place improvement in the curriculum in the Arts in the context of the curriculum reforms of the past ten years, and then to consider what is implied by these comments on the nature of innovation.

Without discussing the curriculum programs in detail -- those in the sciences and mathematics, those others now emerging in the social studies and social sciences -- it is possible to characterize them. All of the recent curriculum redevelopment has proceeded from the assumption that the ways of creating knowledge in each field are also ways of learning peculiar to the field -- that a subject taught in school should be consistent with the logic of its underlying discipline. It follows that the ways of knowing, in each discipline we offer in school, must be taught in school with such modifications as the life experience of the learner makes necessary.

Accordingly, the new curriculum programs are method- and inquiry-centered, not product-centered. Facts and information were never considered sufficient for teaching, but most teaching, we recognize now, has been centered on facts and information. The new programs seek to have the students discover the necessary facts and information through a process of inquiry. Moreover, the new programs seek to confront students with the primary reality peculiar to each field. The student-historian studies the primary documents; the student-chemist spends more time in the laboratory than in class -- or at least as much. The student-mathematician begins with the elemental logic of the field, which is, after all, a field made up of pure logical systems. To put the matter differently: the new programs seek to put in the hands of the student the intellectual tools of the field itself.

It would seem, at least to one outside the field of art education, that these conditions have been met in the elementary art program as proposed by the professional leadership. It is commonplace for elementary art programs to assume that the student is to take a producer's view of art, not a passive consumer's view. He is to make, not to copy the makings of others. He is confronted with the "moment of truth" of art from the very outset: that is, he is, from the beginning, confronted with a blank surface and some media, or with some unsculptured space and the means to sculpt it. Skilled art teachers have, since the Twenties, known a great deal about what to do after this early encounter, in order to keep it alive and growing in meaning. Neither the nature nor the validity of this approach requires further demonstration here. To put the matter differently; the first requirement of innovation, a well worked out design, has been complete for the elementary art curriculum for at least two generations. The fact that sound elementary art teaching is widespread in our country and in the world suggests that the other requirements for an effective innovation strategy have, in general, also been met.

To say this is not to imply that no further innovations are required in the field of art education. For one thing, as art educators know, the "local awareness-interest" aspect of a comprehensive innovation strategy requires constant attention in local school systems. I shall not labor this point further here, however; it is evident, and it is not central to the problem of new innovations in art education.

What is more central is the possibility that the field of art education is still incompletely designed. The conception of the elementary art curriculum seems consistent with the thrust of more recent curriculum development, _if_ one takes its whole purpose to be the development of an artist. But is this sufficient?

What, one might ask, of the existence of art objects made by professional artists? Is the student to gain all his knowledge of these outside of school? Is he to be given no disciplines, productive view of existing art objects? The present art curriculum implies that this is to be the case.

I shall use this question as a kind of exercise to illustrate the application of the somewhat abstract discussion of innovation earlier in this paper. To use it this way implies a certain gratuitousness on my part, since this statement is addressed to art educators who are familiar with the issues involved. Nevertheless, in order to bring this whole affair home, I shall proceed to risk whatever naivete shall appear in the subsequent discussion, a discussion which, it is hoped, will serve some larger good.

The first thing to recognize about any curriculum proposal is, as has been stated above, its relevance to the underlying intellectual field it represents. In the case of art objects, I shall arbitrarily name the field: art criticism. To say this is to assert that there is a meaningful difference between art criticism and the production of art objects -- as indeed there is. No one knows better than the critic that the artist and the critic are different types -- even when the artist turns critic, or the critic turns artist. The production of an art work and the experiencing of someone else's art work are entirely different affairs. For purposes of the present discussion, we shall assume that they are, in the last analysis, unrelated to one another except that they may both have to do with the same object. To say that is not to destroy the argument: an artist and a sociologist might both report on Grand Central Station at five o'clock in the evening, but that would not of itself relate art and sociology.

The first thing to recognize about the criticism of an art object is that it is not you. It is, as has been pointed out, radically other than you. While your engagement with it -- its immediate effect on you, and what it calls up of your experience -- is of importance, there are things of considerably greater importance: all those things that have to do with the fact that it exists independent of your experience of it. The radical otherness of things is difficult to accept, especially for children. If, therefore, one were to attempt designing an innovation that sought to introduce to children the possibility of art criticism as a valid way of knowing art, one of the first tasks would be to deal with the fact that art objects exist, whether you know it or not, and that their existence is in no way contingent on yours. One might ask, "as a teacher, what is it that one can do that will bring home the realization of radical otherness?" I shall not attempt to answer the question here, except to suggest that the answer might be in terms of art objects as well known as the Sphinx, or the _Moses_, or _Pieta_, or any other famous, high-and-far off art object.

Next, one must ask what the nature of an imaginative critical act is. In a study of the teaching of literature we are currently carrying on, we have found that four categories of critical elements account for the corpus of literary criticism: engagement-involvement, perception, interpretation, evaluation. Perhaps somewhat the same categories apply to art criticism, though the elements within the categories would differ. In discussing one's engagement with a work of art, perhaps one considers such an element as one's personal reaction to its content (as one might react to the religious content of _Moses_).

There are more elements, however: one might also consider what Moses evokes in one's past experience ("it's like my father"), or one might carry on an impressionistic monologue ("Moses' people shouldn't have acted like that"). To do all this, however, is not to perceive the statue; it is to report its effect on one. It does not, yet, deal with the radical otherness of this great art object.

To deal with the otherness of Moses, one must, at least, perceive it as an art object, as a statue. In perceiving it, one might discuss aspects of the technique it represents, the medium, the setting in which it is displayed, its monumental style, and so on. Beyond perception lies interpretation: what one takes the statue to signify. Here, one might discuss its mimetic character, its mythic character, its social character. Beyond all of this is one's evaluation of it: is it a good, or mediocre, or great, or poor, statue. Here, one seeks to state and elaborate on the premises of one's taste; to state that the statue is good or poor in terms of some criteria, for to criticize implies that one applies that one applies criteria -- that one cuts into the experience in such a way as to expose it for contemplation.[3]

It is not my intent here to discuss further the nature of art criticism, or to explore whatever parallels exist between criticism of the various arts, or even to present a complete account of our study of literary criticism. My purpose, in the preceding paragraph, has been to present enough evidence, and only enough, to support one point: that the act of art criticism is an intellectual act, that it may be thought about, that it is a real form of knowledgemaking, and that it exists.

Let us pretend, for the sake of this discussion, that the description of the nature of art criticism as an intellectual act is sufficient, and that we wish to consider seriously the possibility of replacing what we loosely call "art appreciation" with this more substantive material. How might we proceed?

If Miles' notion of a comprehensive strategy, together with the suppositions about school people I have supplied, were to be applied, then several steps would have to be taken.

First, and most obviously, the discussion of art criticism in principle that I have presented would have to be clarified, expanded, and improved upon. Above all, it would have to authenticated; that is, we would have to be satisfied that it accurately represents the view of responsible art critics concerning the nature of art criticism. (In the case of the study of literature, we found that this could be done, and fairly quickly -- it took only the better part of a year). But to do this, while it might be of some use to the field of art criticism, would not yet to be to have done anything pedagogically. To design an educational innovation means to conceive of it in pedagogical terms. In order to fill out the educational design, therefore, we would have to hypothesize teachers, and learners, and teaching materials, and lessons.

The design of such pedagogical proposals has, in the case of the new curriculum proposals, been undertaken by teams of scholars and teachers, working together for substantial periods of time, trying ideas and teaching sequences first in the abstract, then on representative classes. Some such enterprise would, no doubt, be required if a design (or a series of designs, as in BSCS Biology) were to be qualitatively adequate.

Next, perhaps as the design period came to an end, we would attempt to build local awareness and interest in the new possibility. To do this requires a sensitive awareness of the predispositions of laymen and professionals toward the field in question. In the case of art, the professional art teachers have been upon occasion both canny and naive in this respect. It is canny to display children's art work; it is also valid, for the making of an art object is a public act -- most art work exists to be displayed publicly. But the discussions of art work by professional art educators have often been incoherent and obscure, from the point of view of those whose awareness and interest they seek to arouse. First, the nature of art experiencing (one would quickly learn that "art criticism" is so widely misunderstood as to abort all discussion) would have to be conveyed in ordinary language, both to teachers and to laymen. Our American attitude toward art objects is ambivalent; we grant them their status as representative of high culture, but we don't really believe, as a people, that they are worth the prolonged attention of serious men. We think of art as play, but our Puritan heritage demands of us not play, but work. When, as art educators, we seek to create local awareness and interest, we have to expect to teach the public something it would know, if our predecessors had been doing what we propose to do -- that the appreciation of art is a serious intellectual affair. We probably would have to find ways of talking to an uneducated public of something as highbrow as the relation between art and life. There would be more, however. Teachers not only require convincing that anything new is worthwhile; they also need to be convinced that it can be taught. Demonstrations, motion pictures, opportunities for teachers to practice, all would be required, if the teacher is to believe that the new thing can be taught.

We turn to local evaluation. Somewhere, in the localities one at a time, pilot trials would have to be set up, to see whether the new curriculum could be taught locally. It is to be expected that when anything new is tried in a locality, it will require some modification. No design is so thoroughly engineered as to require no local adjustment. However, the more thorough the engineering (what we have called design in these pages) the less the difficulty in making local modifications, and the less likely such local modifications are to misrepresent (or destroy) the basic intent of the new curriculum program. Moreover, if local evaluation is to be more than impressionistic, means for making it adequate should be provided in the original design. It is reasonable for teachers to ask, "how am I to know that the new project is working as it is supposed to?" Remember, we are assuming that the local teacher is as reasonable as the system permits him to be.

Local trial, which will follow from local evaluation, ordinarily requires some form of in-service preparation of the teachers. The evaluation should anticipate this need, including in its scope some exploration or perhaps experimentation with various modes of in-service education. Local trial, on a system-wide scale, requires that the system itself be modified to accept the new program: time and funds, facilities, staffing, and materials all must be anticipated.

In the preceding paragraphs I have meant to come to the most practical level possible in a paper of this kind. My intent has been to spell out the application of a comprehensive strategy for one curriculum innovation in enough detail to permit the experienced art educator to criticize it. My own strong impression is that, despite the fact that Professor Miles' comprehensive strategy is itself only a proposal, it tends to call up the steps and the questions that would indeed be required by any actual innovation. In so doing, it is interesting that one is carried far away from the reliance on exhortation that has characterized so many attempted innovations during the past two or three generations.

The difficulty with the tradition of curriculum development of the Thirties and Forties, in the light of these remarks, was that it did not pay sufficient attention to basic design and engineering, and to the need for carefully developed pilot trials. It did take an optimistic view of teachers -- which some of the current curriculum innovators don't seem to know enough to share. But its view of their capacity to design new curriculum programs, based only on exhortation and a few guide lines, looks inadequate -- at least, in hindsight. We are in possession of far more powerful means now. Perhaps using these means imaginatively, Professor Mort's famous fifty year lag can be shown to be not inevitable, as Professor Mort thought, but the result of primitive innovative strategy.

LIST OF REFERENCES

1. A note on sources: As this is written there is only one substantial reference on education innovation: Miles, Matthew B. (ed.): Innovation in Education, Bureau of Publications, Teachers College, Columbia University, New York, 1964. Unless otherwise indicated, references in this paper are chapters in Miles' book by the authors named.

2. Matthew B. Miles, ed., "Administrative Theory and Change in Organizations," Chapter 18, Innovation in Education, (New York: Bureau of Publications, Teachers College, Columbia University, 1964).

3. In all of the above, I have relied heavily on an analysis of the nature of literary criticism prepared for a Horace Mann-Lincoln study of literature and composition by Alan C. Purves, until recently a Professor of English at Barnard College, now a member of the staff of the Educational Testing Service, and on correspondence and conversation with Josephine Miles of the English Department, University of California, Berkeley.

EXCERPTS FROM THE DISCUSSION WITH MR. FOSHAY:

Audience: What you have done and are doing for us was showing how intelligence can be institutionalized in a system, in a social structure; and I suspect that that is where the Dewey analysis, and those that followed him, did not go. I would like to applaud that proposal.

Mr. Foshay: I don't see any fundamental disagreement between the serious proposals of the progressivists and this set of proposals. Not at all. I do think it is not just a shift in emphasis but an addition, as I gather you do also. I would like to comment on something I think I've learned in this connection. We had a very dramatic series of events at Ohio State University in 1956, a series of faculty seminars which lasted all year long. In the one in which I was involved, the question of method of intelligence came up, and a bacteriologist in the group said, "What do you mean by that?" This was simply another universe of discourse from his point of view, really quite strange. It sounded like educational jargon. Harold Alberty offered a couple of comments. Alberty is among other things a magnificent teacher, and he really taught this concept in about ten minutes. When he was all through, the bacteriologist said a very interesting thing. "Yes, I recognize that. Of course, as a bacteriologist I don't work that way. To reduce what research in my field consists of, considered now as a logic of acting as a bacteriologist, to reduce it to those statements wholly overlooks the problem of unknown variables." It just doesn't deal with them. In bacteriology, and I guess in the biological sciences and in general in the behavioral sciences, the problem of the unknown variables operating in a situation that is changing is very prominent indeed. Now, that was a very serious comment in terms of my own intellectual growth, I must say, for I have thought about it a lot since, for what is the method of intelligence? It's a meta method; it is a way of talking presumably about the way the human mind works in a way that rises above any particular act. But the problem is that it doesn't help you to do anything in particular, and particularity has to be present. I offer this because I suppose there will be those who don't agree.

Audience: In terms of the values of innovation you describe, how would you characterize James B. Conant's activity and impact upon education?

Mr. Foshay: Conant's strategy, Conant's approach to coming to an understanding of the American high school, you recall, was to spend a year or two visiting in high schools all around and listening pretty hard to what the people in them said. It wasn't a very well-organized body of data, but he got a lot of impressions. I suppose that what he proposed then would be called design. What he proposed was intended to be a collection of practices that exist. Therefore, they are practical; they can work, and which when put together any place, in his opinion, would result in a better high school. The other thing he did in his design is represented by the twenty points at the end of the book, and this he puts in bold face. This is simply to make it very clear what he is up to. I call that design, too. The Carnegie Corporation now turned to the mass media with enormous skill and created very great awareness and interest, and stopped right there. So, as a result you get this kind of thing because of the great local pressures. A lot of powerful people in local school systems acted upon the school system to make it change--what you get is a slavish imitation of this design; and there are Conant high schools all around the country. This distresses Conant to no end, of course; he didn't want slavish imitation. He knows more than that, but that's what you find. To put it one other way. Maybe a word that catches up the general meaning of this strategy is the word engineering. The better engineered, the more fully developed in terms of materials, testing, teaching approach, illustrative practice and the like, the more fully developed any of these proposals is the more available it is for local trial. Well, the most available part of Conant's proposal is his proposal dealing with academic guidance and it is interesting that this is the particular practice that has had the widest spread of impact.

Audience: I have been making an informal study of some of the humanities programs in secondary grades. I wonder how you would describe curriculum innovation in this area. It seems to me to be a mixture. I think the schools, in one sense, are running ahead of the universities. The teachers for these programs are not coming from us. I don't know of any college or university that is preparing teachers for these programs. Some of them have been John Hay fellows, who have gone away for a year and have had a good dose of learning and have come back and want to do something different. In these humanities programs they do everything from natural science to philosophy to painting. Would you comment on this general situation?

Mr. Foshay: I wish I knew much more about specific programs. They seem to be woolly as indeed your account of them suggest they are; and I agree the teachers aren't being prepared to deal with these things. I would like to describe a project that I am full of right now that is one of these and illustrate at least in some degree, the design problem as we see it. This is a project dealing with children's reactions to literature. Let me see if I can put this briefly. In the spirit of the contemporary curriculum program, if you become interested in clarifying a problem area as ill defined as the study of literature in the secondary or elementary school, the first thing you have to do is to ask whether it's possible to put the knowledge this field represents in order, or whether indeed there is an ordering of it that makes it possible to teach, whether this exists somewhere. To do this, you have to decide on what the conventional scholarship and what the conventional scholarly name for the area is. In this case then, I have the help of a brilliant young man at Barnard College. I asked him the kind of stubborn question that an educationist can ask these days, you see. "Tell me, sir," said I, "I have a major in English and I have some old knowledge in this area. Tell me now what this field is." In the course of a year he performed a tour de force. He did set it forth. We convened a panel of very eminent people to go over his analysis of the field, as it stood at that point, and to be critical of it. It has been modified in time with their criticisms and others. I will simply say that I will tell you all about it in the length of four hours if you want to hear that there is a way of stating the organization of the field of literary criticism now that didn't exist a year ago, and that it is understandable to laymen and satisfactory to the people in the field. What Purvis did--Allen Purvis is the name of this man I have been praising--what he did was to decide that there is a finite number of elements, cognitive elements that critics, all critics, use. They don't all use the same ones, and certainly they don't make the same points or use the same configuration. But, it was possible to have an exhaustive and neutral statement of what the elements of criticism were. One makes neumetic statements, one makes statements about social or moral plausibility or acceptibility, etc. There are seventy of these. Some of them are not critical. When we applied this to children, we found that they were saying things that appeared in no critical schema like the criticism of a story by William Carlis Williams, because the dialogue didn't have punctuation marks. This upset them no end. Now, these elements can successfully be divided into four general categories, and the categories can be called in ordinary language: those elements that deal with my engagement with the work of art--when I talk about the way in which it hits me, I really talk about me. Second, those elements dealing with my perception of the work of art--what I think in itself it really is. Third, those elements that deal with what I think it signifies--its meaning; it can be typological, or psychological, social. Finally, those elements that deal with my evaluation of it--how good I think it is, and why. We seek in this project now not to deal with the teaching of taste, but with the development of the premises of taste, the deepening of this kind of awareness. I was using that of course in the illustration in the unread portion of the paper in supposing that literature was like painting, in some degree, and that some such approach might be profitable.

Audience: When you were putting together the trends in curriculum research with the historical considerations in this century, the thought occurred to me that perhaps in times of threat art education turns to emphasizing creation, while in times of non-threat it emphasized appreciation. In a new frontier we emphasize creativity; in a great society we would look for appreciation skills.

Mr. Foshay: That's interesting. I have this that I would add to it. I go back to the thirties as you sir do not. Forgive me for pulling gray hair. I remember very well the discussion of the art educators whom I knew at that time about what they were doing. They were relying, of course, primarily on notions of child development as related to artistic behavior. Now, I have a hunch about this based on those memories. They felt under threat then. We were in poverty, and frills were being cut out, and in our puritanical society art is a frill because it sounds like play and our society believes in work. This is the tradition. This is not the way we act, but this is the way we talk all the time; and we make some public decisions this way. My impression was at that time then that their reaction to that serious threat--the threat of being wiped out locally--was to get into the main discussion; and that's where the main discussion was. In my view now, they seriously distorted the field itself by making it a kind of symptom of child development, coming at it, psychologizing it. This happened in many fields. It also happened in music; and the creative music movement of the very early thirties and late twenties died on the vines. It was one of those innovations that just never got anywhere, when intrinsically it was quite possibly the most important thing musicians could have been doing.

Audience: In your terms, a powerful outside force is advocated here, which is called a center for studying and doing something. What in your experience would make a center a meaningful operational system, especially in the appreciation area which you have been following?

Mr. Foshay: Very quickly I would think that the center would have to make proposals that would be adequate for local school systems to act on. In the case now of art appreciation, my impression is that a problem similar to that in the study of children's responses to literature and in the field of literary criticism does indeed exist. That is to say that it has not been necessary for the major critics in this area to try to conceive of their field in this fashion as the historians have a field called historiography. There is no equivalent field that I am aware of in criticism. Something like this sort of field would be required. Now I should think it would be more reasonable to undertake that kind of difficult work with the high level and rather scarce people that you have to work with in a center than it would be in a local school system. But beyond this, one might develop a more adequate conceptual design of the curriculum innovation. Beyond this, I think it would be a function of a center, quite a proper one, to provide the tools and maybe the means for dealing with these other aspects of innovation. One of the failures repeatedly in curriculum innovations has been the failure to provide the local school system with the adequate means for evaluating the innovation in its own setting. This leaves the school system evaluating it--as of course it must evaluate it--in its own terms, largely intuitive, impressionistic, sometimes political--the school system politics, politics within a system. These are rather poor ways to evaluate. So, I repeat, I think it would be quite proper for a center to try to work with all of these phases of a strategy.

Audience: In your paper, where you were discussing Daniel Griffiths' ideas, you make the statement that school systems are hierarchical. It follows that change can flow down through the system very much more easily than it can go up through it. Then later you say that the more hierarchical the structure of an organization the less the possibility of change. Can you comment on these?

Mr. Foshay: These are different points, of course. The relationship is simply in hierarchical structure. You assume a multi-level hierarchical system which focuses up to some office at the top. Griffiths is saying, given this system-- and school systems are all like this, of course, as indeed any complex social organism is--given this situation, if you want to introduce a change at the bottom, you had better introduce it at the top. If you try to introduce it at the bottom, the reward system is unattended to; and it's very likely to die. This matches our experience. That is a different point from the other one which is: the more complex the hierarchial structure, the less likely the whole structure is to change. And one reason for this, as he indicates, is the interplay of dynamic, and he might have said more or less autonomous, subsystems within a large-scale, hierarchical complex structure.

Audience: I guess what bothers me is that you seem to say that you have to have hierarchical structure to have change, but if you have a lot of it, you can't have any change.

Mr. Foshay: That's right. It says both of those things.

Audience: I wonder if you could shift this slightly to a very real problem for the members of this group. I am sure you are aware that we are here as a subgroup of a much larger group. Now, we have the task of relating this to a larger society made up of classroom teachers, art supervisors, city directors. Can you give us any clues about working in a system where I think we all rather feel we have a big job of innovation to do?

Mr. Foshay: What I would say, you already know that much arises directly out of one's experience and common sense. The other ten per cent would have to do with innovations from the professional association which don't catch. It seems to me that it is typically, because the professional association has not dealt effectively with what the teacher is

supposed to do as a consequence of having heard them, but rather how she is supposed to feel and think. Or to put it differently, professional associations that I have known about--I don't know this one well at all--have typically been criterion setters and exhorters rather than engineers.

SPONTANEOUS SUMMARY STATEMENTS BY SPECIALISTS

Mr. Rosenberg: I would like to congratulate the management on the thoroughness with which we have been processed. I feel as though I am going back to New York in various packages of bacon, bone fertilizer and other commodities which have been gotten out of us by a whole series of operations. At first we were asked to write a paper, then we read the paper, then the paper was questioned from the floor, then we met with various groups and various groups met with us. We met individually with various groups and we got on television, I mean, there's no end to this. It shows that attention was paid to us. We have to feel satisfied, which I do. Seriously, I can't imagine a more expressive way of slicing up somebody's mind if you are going to use it for any purpose at all.

I want to add one thought before I leave, I think I've said enough about art, anti-art, the usage of art and the dangers of having art education without art. But during the course of some of the discussion yesterday, it suddenly occurred to me that one of the things that people rarely think about is what you might call the "seamy" side of art which may be one of its greatest resources in teaching kids. We have tended, especially in this country, to think of art as something very "noble." Remember that President Eisenhower said that very strongly when he compared modern art to a can of paint run over by a truck, and he felt that art ought to be more "noble." He said ("mother-like" great art. He didn't care for the sort of daily traffic that art had gotten into. Now I think in that statement he was reflecting a kind of secret aesthetic that prevails in the United States, whether or not this is expressed explicitly by critics. And I think there are some critics who actually do take that view. They want art, in other words, to be an "ideal creation." And that's what makes it difficult to teach. This "ideal creation" is just as boring to kids as any other "ideal creation" with which they deal in classrooms.

Fortunately, art in the last fifty years has a strong strain of juvenile delinquency in it, that is, it started fifty years ago exactly, the period of the start of the Dada movement, which was a movement of the start of juvenile delinquency in college humor, responding to world-wide catastrophy. There is a great deal of emotional undercurrent in everybody's life, beginning at some unspecified age, which is a response to this state of affairs. There are also all kinds of psychological disturbances, social disorders, ethnic problems, all of the things you people have been talking about -- all of these things are in modern art and it is in the art of the last fifty years, particularly, the art since World War I, 1914. Now if you start talking to kids about those feelings which are inherent in modern art, I think you can even go back to the Greeks because they had troubles of their own. So, if you start with those beautiful Greek monuments and start explaining them in terms of form and grace, the kids don't know that it has anything to do with them.

In other words, the message that I want to leave with you is: modern art has to do with every child that comes into your class, whether that youngster is going to become a teacher or the ultimate object of the teaching, so the more you know about the intrinsic content of contemporary art, the easier this job is going to be. Thank you very much.

Mr. Kaprow: I'd like to underline Hal Rosenberg's view of our responsibility, all of us, to contemporary art especially, and at the same time, suggest that one of the greatest difficulties which we have had to face in the last fifty years in this country, as far as I can judge the educational growth. The problem is that instead of really seeing what is happening in modern art and in addition to that, looking to the past for some sense of measure, we've grown further and further away from artists and what they do and what they have done. So I think it is very important for us to restore that sense of real measure to whatever tasks we face individually in trying to work out curriculum and testing measures and better teaching conditions.

I have made the suggestion that one way to approach this is to actually look at what artists are doing and how they do it and, furthermore, to in some circumstances, I would even say in many circumstances, if possible in the future, bring certain aritsts to the classroom, to the school. Now, this means studying what those conditions of making art happen to be now when the artists are not in the school in order not to kill the whole program when their environment is changed. In the course of the discussions here I have learned a great deal by listening to you people who deal in areas I know absolutely nothing about -- areas having to do with school environment, social environment, etc. which, to a certain extent I only know indirectly, as I respond intuitively as an artist, to those forces. Now I am beginning to see what an enormous job this is in trying to work out a better school situation with respect to our subject. It has become clear to me in the past day that we may be faced with an almost insuperable situation, it might be an ultimate dilemma, namely, that if art is produced, and apparently it has been, in this country, in great abundance and vitality as in the last fifteen or twenty years, we discover as Harold Rosenberg said, that some aspects of it may not correspond to what we would like to think of as the "nice" side of life, that a pretty studio, bright sunshine, politeness and good upbringing don't necessarily have anything to do with it. In fact, sometime they have the opposite to do with it -- they kill it.

I don't want to suggest that by opposite reasoning, therefore, you have to be a juvenile delinquent to be an artist and we should encourage this kind of thing in school, but that we should pay very careful attention as to what kind of environment world art is being produced in right now and has been in the last twenty years of vitality here so that in trying to model programs after these factors, if we can isolate them, we don't unconsciously change the circumstances and then throw up our hands and wonder why it hasn't worked. In short, it may be that we have got to find out whether art can be taught in the school system as the school system as an environment exists. This is a problem that needs testing and some of you have encouraged me to pursue this and I, in my proposal now have begun to think that maybe this is the way to focus upon the idea that art should be brought into the school system. Putting it another way, if an artist has been teaching in a slum area and has been doing marvelous work it is conceivable that if you brought this same fellow or girl into the school, any school, the most welcoming school in the world, the performance level would drop drastically largely because of the set-up of the environment. Its specific requirements regarding time, the regimentation of students attention and to time groups and just the appearance of the walls. That the janitor tells you you shouldn't put paint on the walls, for instance, is something that very powerfully the conditions of art and these things may be areas of inquiry such that, if, as I begin to suspect but can't prove it yet, these talented teachers that I'm thinking of were brought into the school there would be absolutely no more use for the teachers that are there already. This is a terrible supposition but if it's so, that means that we have got to rethink the whole problem of how art can be taught if, indeed, it can.

In other words, this is one last thought; if school children in primary and secondary schools are to be introduced to art, both, I think, on a historical level and appreciative level and a productive level, can it take place in the circumstances that we now know as the school environment or will it be necessary to do it somewhere else as an adjunctive educational program? If that's the case how do you go about doing that? So I leave here more perplexed than I was when I came. But, I don't know whether this is bad. Thank you.

Mr. Tumin: I don't like Harold Rosenberg's metaphor about being packaged on two grounds -- First, my eth class forbids me from thinking of myself in terms of being made into bacon. Secondly, I prefer to think of the more active role, you know, when we had the joyful implication of having serviced the audience, rather than having been packaged by the audience. I think one of the over-all perspectives I have finally achieved at least provisionally during this conference is, well, I used to vary between the statement that "I know what art is but I don't know what I like" or "I know what I like but

I don't know what art is." Now I'm prepared to say that I don't know what art is and I don't know what I like, but I know its good for me. So if it's good for me it has to be good for you and for everybody else, too. That really is the framework from which I approach the task of art education.

Recapitulating some of the statements I made earlier to the effect that the selection and determination of the purposes and goals in art education is unavoidably, as in all value questions, a matter of the human's exercising option in choice. It's not given in the nature of things. It's not like that to which would be susceptible to if you used the definition that the pig is rightly called because he is such a dirty beast. There is no such ontology of art education and I suspect that the best procedure one can enter upon in determining goals and purposes of art education is to ask what one himself wishes to do as an art educator and do that. But, in the conferring with colleagues one has to scan the limits, the varieties of things that colleagues are interested in as well as what one is interested in. I note that three major emphases seem to embrace the field as has been stated before, but these are worth restating. The purposes for education in art are (1) to learn about art and have the experiences that come from knowing art, (2) to learn about ones self and life and to have the experiences of development that come from that range of exposures whether they be through great works of art or whether they be from manipulating clay or feeling surfaces or discovering the capacity of transacting ones self with some version of the environment in a way that no other subject matter makes possible, and (3) is to use both those experiences and the exposure to great works of art in order to learn about human history and civilization as a record of what humans have tried, have achieved and have failed.

It seems to me to be very interesting and important that these three purposes together can be made fully consonant with the ethic of general education in a democratic society, and in no other kind of society, when they're taken together. When one introduces the use of art education through a variety of means of in order to bring children to a more full awareness of themselves and their capacities it opens up dimensions of being which they have not experienced before, which once known are never forgotten. However, if unpracticed they may be and that may be the crucial part of the art education experience, just as you never forget what happened to you when you played right or when you made love right. I think you never forget what happened to you when you were spontaneous and lost self-consciousness and related yourself to materials in ways that you had never done before. That range of functions I have described as the development from the elaboration of the self make art education consonant with general education in the democratic society, a constant derivative there from and supportive thereof. This provides the model and suggests some of the conditions under which generally equal education for all children could be equally appropriate education.

Hence, equal education for all children at the highest level of possible quality could be achieved by our schools given certain other facilitating material and conditions. I take as a given that in the attempt to achieve these purposes there is a natural variability of talent, interest and sensibility and that, therefore, different levels of expectation are perfectly appropriate. As Sidney Hill put it -- they are not the least bit anti-democratic so long as they are not used for a basis for discriminating who shall be rewarded within in the system and who shall be given opportunities within the system. This perspective on differences in capacity is a valuable guide. It is valuable as one holds it in the back of his head, and never consciously operates as though it were so, but operates with just the opposite, namely, that there are no known limits on any of the children. For, indeed, we do not know enough to be able to say that we can't suddenly, in each child's biography, find a multiplying effect which suddenly lifts him to a horizon of possibilities which he had never seen before. I think that this is a very romantic version of the unflowering and the opening and the multiplying rate of development of the child -- its the kind of emotion that is indispensible for a child to know that you care about him and second, for a child to feel that he himself can grow. Those are two indispensible conditions for growth itself.

I mention as another given the fact that the major impact of the institutions of the outside world tend in the direction of formalization, restriction and banalization of capacity, taste and sensibility. The child is likely to find that he undergoes de-education and he may decrease in his own capacity to react in an individual in a unique and gratifying way.

Another of the obstacles in our path, however ideally we conceive of the purposes of education is that in a democratic society primary and secondary education have been put in the context of being almost totally instrumental to tertiary education whose purposes itself have not been stated. Tertiary, in this case, means the college or university level. This can be the death of education since if you are always studying something in order to be able to achieve a purpose extrinsic to what you are studying for, much of the value of what you are studying and being exposed to is lost. Those who are concerned and involved in art education, or education for creativity, or education for art, or education through art for life, must face the realization that the instrumental approach simply destroys the possibility of achieving any of the three major purposes of art education. You cannot succeed in art education if you see it as simply instrumental to external or extrinsic achievements, or if you are concerned primarily with rewards, or if you try to introduce any measure of competitive evaluation and attach moral tones of approbation and disapprobation to the better and worse products. These intrinsic features of art education, its consonance with democratic purposes, its consonance with the notion of the rightness equality of education for all, regardless of the differences of talent, it seems to me, give us the kind of psychological armor that one needs in the period when the whole enterprise of art and art education are still extremely unfashionable. Art education does not seem to stand a chance in the competitive struggle with other so-called more useful subjects as they compete for time, money, effort and energy in school systems.

The fact that different percents of the population will reach different intensities and levels of the various goals need not defeat us at all any more than it would be right to feel defeated simply because by the 12th year of education some people are able to do advanced calculus and others are unable to add a grocery bill. Shall we say the education is valueless because we have achieved differential amounts with different persons.

It seems to me there is no point in trying to get concensus as to what is the proper amount of emphasis among the three goals of art education. It depends on ones own individual interest and how he wants to relate in the classroom. The means toward these ends individually, the kind of constellation and balance of emphases that an individual teacher wants to give, is the agenda of research in art education. That's the general agenda but how do you get there? That has been the core of the knotty problems to which none of us from the outside can contribute very much in terms of direct personal experience except from our own knowledge of general education, but that's no more than what most of you have about education.

You are the specialist in the means and that obviously calls for a continuing program of interplay between art educators and the research community, art historians and incidentally artists. I see a very special and different role for artists in this interaction as against the research community, art educators, and art historians. By art historians, I mean so far as I can tell, solely Joshua Taylor and one or two others. He is going to be a very busy man at many conferences. For role of the artist I don't mean to suggest a secondary, ancillary or tangential one, but we ought not to expect artists to be able to talk well about what they do. If they could then they ought to talk and not paint. Similarly, one ought not to expect dancers or poets to be able to talk well about what they are doing unless they have that unusual combination of a critical faculty as well as a creative faculty. But the observation and the interplay with artists is surely of great value for anybody trying to discover what the art process is. One is going to have to deal with artists in the way that probably is anathma to them namely, you are going to have to sample them. It seems there is an enormous range of variability in the ways in which different artists come about what they are doing and how they conduct their enterprises. This variability in ways of working has to be taken as one of the conditions one will find in the art community and therefore as one relates to artists one ought not to say, "Well, if you could only spend one year in a studio with this man you will learn more than spending ten years with the whole community on a sampling basis." That is the same fallacy that some excessively zealous psychoanalysists insist upon when they suggest that if they could only get one human being and get all the fundamental racial unconsciousness of all human beings. I think this is nonsense.

Another of the elements of the research enterprise is the discovery of the modes of interaction that are best utilized in relating the research community to art educators, to artists, to art historians. You must remember that when you get a research problem in motion you must specify what outcomes you are interested in. If you say you are interested in what is best for art education and don't differentiate which piece of art education you are talking about, which specific salient of goals you are interested in, you have no conceivable way of making a rational discovery of the alternative effective means toward that end.

I will close by noting once again with great gratification the extraordinary development that has occurred as far as I can tell, from my tangential relationship to the field of art education in the last ten years. Part of this is not your sole credit for there has been a general legitimation of the field of education by a very simple thing called money and research support. There are other things that are to your credit -- there's an extraordinary greater amount of research seriousness in art education. There is a much greater willingness to think and formulate clearly in verbal terms rather than to "dance" one's impressions. That's good because you may have to start with "dancing" but you must end up with words which express clearly, though not exhaustively the totality of an experience. No one ever captures the totality of any experience and we are always abstracting from experience in any intellectual effort. When you try to intellectually construct and conceptualize the educational situation whether it be art or other, one must settle for partial exhaustion on a specific level. We must recognize that there are numerous levels and various kinds of holes and perspectives that one might have adopted and one is not going to get at all of them.

More thinking and conceptualization and less "dancing" is a very salutary development and what is correlary is that there has been a greater interest by research people in working with those who are willing to stop "dancing." While it is aesthetically pleasant to watch people feel, and surely you know one of the nicest feelings in the world is to watch an absolutely inarticulate good teacher working with kids. Something marvelous is going on. One knows it, feels it, senses it and its a great experience but its not yet susceptible to rational discourse until one translates what is going on. The teacher may be the one person in the world who is absolutely incapable of helping us by saying what is going on. I think there may be an inverse correlation in being able to do it well and being able to talk about it well, but not necessarily.

I am willing to entertain, along with Allan Kaprow, that the possibility that there are extraordinarily limiting factors characteristic of the school situation as it is presently constructed, but it doesn't take much imagination to think of ways of reconstructing the school situation without going out of the school, in order to achieve or at least to minimize or reduce some of the damaging influences of the school. One can think of destroying once and forever, or obliterating the notion that all things have to be done in a forty-two minute period. This has nothing to do with developmental sequence in children or the development of a particular enterprise. We could destroy forever the notion of semesters and school years which were originally designed to allow kids to get out to plant and harvest at the right time. They were turned to an agricultural cycle. There is nothing organic about starting school in September and ending in June. These are susceptible to manipulation at least on an experimental basis and they are part of what one has to manipulate in the process that produces outcomes.

I end by reiterating the feeling that I have every time that I relate to people like you and that I hope you have about yourself, however much others might try to make you feel to the contrary, and this, again, not by way of flattery, but by way of getting intellectual conviction on my part, that the single most important teaching that can be done in the schools and in primary and secondary schools, the single most important bit of teaching, is the teaching that goes under the name of art education. I think more opens up by way of possibilities in a child out of a good education in the art class under good instruction under good circumstances, than in any other subject. Your enterprise is of such great importance it should be the kind of thing which can sustain you in the moments of greatest adversity when people tell you that you may have from 9:30 to 9:52 to teach these children how to draw with crayons.

Mr. Taylor: I have talked so much this week that I am hoarse - intellectually hoarse and hoarse in voice. I have enjoyed tremendously talking with you, aware that your ideas have been very different from mine, your experience far more realistic than mine in dealing with teaching matters, etc. I have also been tremendously impressed at what struck me at the outset as an impossible diversion of procedures, attitudes and intent. That, very quickly, we developed a means of talking together bodes exceedingly well for your achievement.

In the first place I would like to say, again, something about history. I noticed that you can't resist saying, when talking about my work produced before 1950, that it is the history of art you are involved with. Really all you are talking about is a work of art that was done before 1950. I don't know at what point history stops and something else starts -- I'm not sure what starts after history. Perhaps something called the present -- but, of course, that's an abstraction. The present doesn't exist. If you think it does try to hold on to it. History is not a body of material, it is not a subject matter at all. History is a discipline, history is a way of dealing with material, I have suggested that art history's way of dealing with material has a great deal in common with criticism, it has a great deal in common with looking and dealing with works of art individually. What the historian does is to enlarge further and further the chronological context, eventually arriving at a tentative organization. What I am terribly afraid of is that when you talk about including art history in a program, you may be talking about the organization as if it were history rather than a method of dealing with the works. I have suggested I'm afraid to a tireless degree, that what I am interested in seeing is a development of the capacity to deal with works of the past and of the present, in a meaningful way -- in a way meaningful to the individual. In this process historical organization eventually will take its place but that is not necessarily the place you begin. The jargon associated with it most is not the place you begin in talking about a work of art.

I would hope then, that the procedure of teaching would move towards a greater awareness of the significance of an artistic experience, an awareness that would demand a further knowledge. I'd like to emphasize in this respect something that Harold Rosenberg said which I have been talking about outside. I don't think I have said it officially. One of the things that disturbs me very much is the way that much instruction in art has been organized on the assumption that art is only nicety, order, organizing - is somehow bringing a nice, tidy sort of design out of that which is undesigned. This has never been the case.

Art always has been far more delinquent than it has been far more delinquent than it has been legal. That is one of its major virtues through history, not only just since the first World War, although it has certainly been more avid at destroying the simple and the conventional. It has always been that way. In fact, some works of art, I'm sure, have been created in order to make us feel that all's right with the world. Other works of art have been created deliberately to make us realize that all is not right with the world --I don't mean just the social world. I mean that there are bothersome problems (and I don't want to define that word) that there are bothersome things about ourselves, about the world around us. In other words, art keeps us alive. It's a little thorn that artists have a way of creating when we are walking in our bare feet -- that is, the bare feet of our sensibility. I think that possibly that if this is emphasized to quite a degree that we will be able to make much more contact with people. That is, if art is looked upon for what it provokes rather than what it hides, what it organizes into a contained unit, we might find it a far more communicative subject.

On an entirely different subject, I suggested in my paper but I didn't emphasize it. Now I want to suggest again that I think that as art educators you should concern yourself, not only with the art room, and not only with your specific curriculum in art but with the responsibility of education in art as it pervades the entire school system. I know that in saying that, some of you may say we have enough to do already, and of course you do, but that doesn't make me hesitate at all. What I mean by this is very simple. I have suggested that certain considerations of art belong appropriately with history or with a study of national cultures which goes along with language study, etc. These people are already using art but because they haven't had contact with the art staff they tend to talk about art in terms of various sort of content qualities. In the art rooms art is talked about in terms of entirely different qualities. I think this is very regretable because many of these people talk about art very badly. They tend to talk about how pretty the dresses were in the 18th century or that Roman ladies had hairdos just like ours, etc.

I think that a corrective could be applied if you are clear in your minds what you want to do with art. I think you should help others who are using art in the systems to work along with you. I don't mean that they should give up talking about the pretty dresses in the 18th century, but you can develop other ways of looking at works of art with the students. I think that the way to look at works of art in the sociology or history class could be much enhanced. It is usually assumed by the cultural historian that works of art serve as useful illustrations of the schematic devices they have created to serve as history. That is, after you have studied Egyptian culture you can look at some Egyptian works of art to prove what you have said. This, I think, is a fallacious way of operating. In fact, that's not how we build history, in the first place. Actually, if children are taught to look at works of art with sympathy and some understanding they might discover that they learn more about the culture through the artistic experience, which in a sense puts them there, than they do by learning through a few paragraphs in a textbook and looking at the art simply as an illustration of the words they have read. It seems to me that this is an important consideration for you. You have to teach, however, the other people using art and I think this can very well be done.

And the last point I would like to talk about has to do with this business that most of you concerned with and that is building curriculae, whenever we begin talking about "what is art" and other fascinating subjects, somebody always says, "yes, but, you know the many problems in grades 1 to 12." I am in absolute sympathy with this, in fact, in far more sympathy with it than some of you. I think there has been a tendency to think about curriculum as an art in itself. I think that's true, I think it is part of your heritage of form making as art educators. But I want to warn you against that because as a historian I look upon that process precisely as I look upon history. The ultimate form, - there is no ultimate form - which you eventually decide to use always should be a product of the procedure rather than being that which legislates the procedure. In theory, I suppose, you could devise the perfect scheme and then apply it. So far I have never met a human being, and I hope never to, who has been able so brilliantly to encompass the variations of human behavior that he can prescribe a total program which then simply needs to be implemented.

What I would suggest very strongly is that if you can sketch for your own satisfaction a series of levels that you hope you could reach in your education of children in art. By levels I mean levels of intellectual comprehension, which require a skill (and I don't mean to separate skill and the level of comprehension). Sketch it in descriptive terms rather than definitions. The word "definition" terrifies me always because to limit, which is what a definition does, is exactly what you do not want to do. In dealing with art it is the worst conceivable thing you can do because you don't know what the limits of a work of art are any more than you know the limits of a child. But you should describe, as best you can, those levels and those goals which you wish to reach. The description can always be changed a little bit by the addition of another adverb or adjective. Then proceed to create for yourself a series of "dances" which can be recorded any way you want. I would suggest words as being most useful but words not as defining but as describing the stage or the procedure. Then try them out and begin your testing.

Now the kind of things you need to test (obviously, I should tell you -- I just learned this here this week) is at what point these various levels can conceivably be reached and in which kinds of situations. I am very much impressed with the fact that all schools are not alike, all neighborhoods are not alike, quite aside from all children not being alike. I think first we must decide which of the areas we are going to work in and then proceed to try out your descriptive levels in these specific sorts of situations. It is only by trying to do this that you are going to find out whether your theory is any good so you don't spend your whole time devising your theory before you know whether or not you can implement it. I don't think you need to have a clear statement in mind before you begin to work. You must have a clear direction in mind and then proceed to work in order to clarify the end. I won't over stress this because it certainly isn't any of my business except in one sense. You are dealing with works of art and I am horrified at the notion of working by definition with works of art. I think it can kill your subject before you have learned to treat it. I would hope that the end product in such an education would be a person eager and interested in drawing useful experience from art, both of the past and the present. I don't separate the two.

I'm quite aware that art being done today is different from art done in the past because art draws from current environment, current problems. Art continuously practices a kind of brinkmanship, and it has to. That's part of its quality and I think that your students should learn to appreciate and value that kind of peril. I think this is a perilous study because you hang your whole intellectual life on it. I would hope that the student would look toward art as an important part of his thinking life. I would hope that this student would wind up with a thinking life that they would value intellectual knowledge (and remember how I insisted that knowledge was not knowing about) and pursue it eagerly. Now whether this is going to come about by what he does with his hands or what he does with his head, I don't know. It is my opinion that probably both things have to work toward this end and I would guess that the chore of your curriculum is to figure out how you can catch the individual, whether by the hand or head and somehow make him into a thoughtful and seeking -- and as a result -- self-respecting person.

I wish you wouldn't talk about history -- I wish you would talk about art and call upon the art historian to help you in the teaching of art. History can help, but please don't use history to keep art out of the school. Don't use history to stand in the way of experience but use it to bolster, to enforce this quality of inquiry and this quality of mind that I think are so exceedingly important, and becomes more important with every year.

Mr. Eisner: In the course of our conversations, different conceptions that have emerged. One of these sees art essentially as a heritage that has been produced in a sense in objects which contain a particular kind of essential property. Another sees art as a quality of human experience which can be had, not only in those things we call works of art, but in many kinds of activities, products, interactions that human beings engaged in. It seems to me that these kinds of conceptions do indeed differ from one another and that, furthermore, while they may have some things in common they have different sorts of implications for what one might do with schools if one embraced either one of these two notions. It seems to me further that what we as art educators ought to be doing in the schools, in the teaching of art, is not going to be derived from our conception of the nature of art, although that is going to have a very important effect in terms of what we do. It is also going to be effected, and I think tremendously effected, by the economic, political and the social changes which occur in our country.

We are operating today in a particular period of history, in a particular time and in a particular place and sometimes I think it is difficult for us to recognize that our own thoughts and our own conceptions and our own needs are circumscribed by the particular period of history in which we live. I think we have something to learn from the past, from the study of the history of education and from the study of the history of art education. As changes in political, social and economical life occurs so do practices in education and in art education change. But not only do they change and I think they will continue to change. Not only do I think this but that they ought to change as one moves from one area in the country to another, from one community to other communities. It may be appropriate for the kinds of things that we do in the schools as art education to be different. I think that it is a mistake to expect that we can formulate a comprehensive, singular, notion of what ought to take place in the curriculum in art education in American schools. I think that there are many kinds of things that ought to take place. Some things will be incompatible with each others. These can be decided if we not only examine what it is that we mean by art but who it is that we are teaching art to, and what it is that we are using art instruction for. When we are engaged in the problem of curriculum development and curriculum construction we need to do this job as a job of inquiry which studies not only the nature of the subject matter but also the particular youngsters to be served, the kind of communities in which these youngsters live, the kind of school programs that we think appropriate for them, so that curriculum development in art education will not be something that is handed down from above and, in a sense, prescribed for all youngsters. Rather it becomes something which is developed in terms of the particular communities to be served.

With this kind of notion in mind, the development of curriculum research centers, curriculum development centers have a job not only of coming together to formulate curricula in committees but working intimately and cooperatively with schools and school personnel. They must develop procedures to work out programs which seem uniquely fitted to the particular communities in which those programs are to exist. I think there is a wide range of justifiable options that can be selected in the development of programs in art education. If we are successful in developing several centers of research and curriculum development in the field of art education, I hope that the kinds of programs that are generated in these centers cooperatively with schools and with faculties, will differ. By rolling up our sleeves and getting into the very difficult problem of thinking through in very practical terms the kinds of things we are going to be doing, the kinds of ends we are going to be working toward, the kinds of materials we are going to be using, the kinds of instructional strategy we are going to be employing, we will have an opportunity to learn a great deal about learning in art and about the kinds of things we can do effectively. I am filled with ideas that have come out in this conference.

This conference is really a hallmark affair in American art education, as far as I have known it. As a way of testimonial, the kinds of things that have gone on here in the past days, I have never experienced in any of the conferences that we have had that I have attended in this field and it seems to me that there is a very good reason for being very optimistic about the kinds of things that are going to happen in American art education in the coming years.

Mr. Villemain: As some of you perhaps know I am something of a turncoat in this area as I graduated from Pratt Institute in art. For many years I have been, in one way or another, concerned with the field of art education although I am primarily in the discipline of philosophy. Unless I misread the history of education, I say this conference is a signal of a turning point. There has been a forward thrust exhibited here that has been already characterized by a number of people. This suggests that something very new is going to happen. From this forward thrust there will be a more improved and secure place for art education in American education.

I'd like to offer, some thoughts. I think you had better carefully attent to the human resources. We are not about to retrain or provide an entirely new group of art educators in the schools. I think you must attend, especially in your curriculum development centers (if we can get them) to not only curricula for the children in the schools, K through 12, but to curricula which will retrain the teachers who are now in the schools. I think this needs focal attention because these are the people who will be working with the youngsters. It won't be you, except on rare occasions. This vast number of people who have something to do with the arts in the schools, had better become the objects of some very focal attention if you are going to render this thing more secure. Further, the task of curricula development for art teachers needs to be thought through by a group of people such as yourselves very carefully. Think very carefully about the curricula patterns that you, as professors of art education went through. I dare say few of you are proud of them and I think you would do well to think about your replacements. We are not going to be in the schools forever so it might be of some value to think very carefully about how future professors of art education are going to be produced. So I urge you to not think about just one curricula pattern but I have identified several sets of curricula that very much need your attention.

Now, one or two other observations that have occurred to me. I sense what I think I can call a bit of parochialism. It is entirely right that if you are going to further the place of art education in the schools that you must address your attention to the social, economic, political arena of our culture which has such an important influence on what happens in our schools. There are competing demands upon the time, the student's time, in the schools. Demands from every conceivable source and you know that as well as I.

It seems to me that it would be exceedingly well for people in art education to collaborate in a very intimate fashion with the people in music, dance, film and so on. To develop curricula centers that operate independently of the other arts, I think would be an enormous error. You have something profoundly in common with other people who work in the universities and schools in this country, and while I do not want in any way to be suggesting that your uniqueness be lost, I do think it would make great strength. You would strengthen each other if you worked hand and glove with the other people concerned with the various other art forms. And so I say, not to go it alone, but develop curricula in relationship with the other arts and, of course, as Dr. Taylor was saying, if you do not work in collaboration with people in social studies and with mathematicians, etc. you may lose out even further. There are interconnections and interdependencies here that can be carefully, cultivated.

About this whole research operation that is now coming into fruition in the field of art education. I have certain misgivings about this although I, along with others like to feel that I represent, the world of scholarship and, hopefully, of research, the comments have been coming regularly from all sorts of sources that the function of the university, the teaching function of the university is being increasingly being lost sight of. I think we have had a pretty dramatic exhibition of what happens in Berkeley when students no longer are given the attention and the talents of the top-rate minds on the university campus. The mood that is growing is "to hell with the student" and we know it well. (Of course, it doesn't apply to anybody in this room, does it?) But I suggest you reflect with the greatest of care upon the place of research in your own lives and in the place of your institution. I grant you fully that grantmanship is a new talent that we are trying to acquire and I am fully aware that administration and the community at large is patting us on the back when we have been able to attract large research funds and the scholarly rewards are very clear. The new word is "visibility" when we gain visibility for ourselves and for our institutions there are all sorts of status returns and economic rewards that are bestowed upon us. So I urge you to be moving into this venture in a fashion that holds clear what it is that is the long range fundamental functions of a university which most assuredly is to contribute to research as Gilman got started at Hopkins so many years ago. But I would also urge you to bear very clearly in mind what this might mean for the students you do not see, do not consult with, and you do not teach on your own campus.

There's another fear that I have about this research. Remember Dewey, in an introduction to a volume called "Reconstruction in Philosophy," made the telling point that philosophy for some years had been preoccupied with the professional problems of philosophy and not with the problems of men. There's a kind of academicism that can come into the research game. That you can do the research and have great intellectual satisfactions, indeed aesthetic satisfactions from playing this fascinating game and the consequences may go nowhere further than the academic setting. And so I'm urging that you be most alert to whether or not the research is going to really be significant for furthering the overarching purposes that I think we have in the colleges and universities of furthering the work ultimately of the schools at large.

Now one other dimension. It is clear that we have moved as a civilization in an international way. We have involvements and interrelationships in the globe that we have never experienced before. We have been assaulted by this; we don't know quite how to deal with it as a civilization. It occurs to me that it is not merely an economic, military and political problem that we as a nation confront. I would like to think that this new set of involvements is as much a problem, is as much an affair for people in art education, as it is for anybody else. But I don't hear art educators talking this way and I would think they might. I don't think the problem of international relationships should be reduced simply to military difficulties, economic and diplomatic and the like. I am not aware of the Agency for International Development coming to the field of art education and saying they need advice about what we should do with schools in underdeveloped areas of the world and how money should be spent in these schools. It seems to me that they are turning to people in reading, writing and arithmetic and in vocational education. I think art educators could come up with some enormously important recommendations about what should be going on in the schools in these underdeveloped areas that we as a nation are directly responsible for. There is the other side of the coin. In these new entanglements I suspect that in our classrooms we can bring to youngsters some further sense and understanding of the meanings of other civilizations and their characteristics through their art. So through some sort of touch with other cultures, their aspirations and difficulties become more and more clearly understood by our children. So I am asking you to address yourselves to this new international, global situation. I think that there is something that you can contribute to this that no one else is capable of doing.

As I think back over the years since the 40's I'm aware that at art meetings have often had recourse to the fervor of a revival meeting. This was never a substitute for careful and fundamental analysis. As I have listened to the discussions here the analyses that I have heard discussed did not seem to me to include one set of inquiries that seem to me to be of great moment and that is, what my discipline generally represents the moral inquiries.

It is not enough, it seems to me, for us to say art is good and then say it does these following things for us. What I think we need are the philosophical analyses, the researches into the value structures which provide the ground floor -- the defense for -- a secure place for the art in the schools. A descriptive research, however important it is, both in terms of what can go on and what is going on, or descriptive research about how we get there, is not enough to render a superb intellectual defense. I think art educators need to get involved with the research which deals with the intellectual justifications and the intellectual repudiations of those values which curtail and hinder an adequate place for the arts in the schools. And so, while we must not "dance," and we must avoid the revival meeting fervor as a substitute for intellectual analysis, I hope there would be a place for our "dancing" eventually.

I think each of us "outsiders" has felt that it has been a two-way street comes hard for me to admit because you see Philosophers have had an occupational hazard since the time of Plato. They like to be considered professionals in wisdom and it sometimes is difficult to find help from other sources if you think of yourself as a professional in wisdom. I would like to think that it has been a two-way street and that perhaps now, at the end of the conference for us, you would repudiate the original category -- some of us want to be "insiders."

RESEARCH SPECIALISTS PANEL

Mr. Lathrop: Since the field of art education is completely new to me, I can speak without any trepidation for you will appreciate that I don't speak with any authority. I do have some observations, however, from having set in in most of the sessions, and you may regard them as the result of my naivete, or you may accept them as the observations of someone who has no ego involvement with the field. It seems to me, from the conversations I have had and heard, that the field of art education has really no very clear perception of what are its most important problems. It seems to me that I observed people going off in lots of directions, some of which strike me as being interesting but, perhaps, not very productive and if I had to assign some priorities I think I could classify some of the projects as being potentially much more useful to the field than others. Now, being something of an anarchist, I don't feel compelled to follow what is perhaps the most important direction in the field but it seems to me that the group ought to, by consensus or otherwise, be aware of what are probably going to be the most fruitful ways to spend their collective efforts.

I expected there would be some greater consensus about what the important problems in art education are, than I seem to have sensed. Maybe you are all aware of them and you're just not verbalizing them but I didn't sense that to be the case. Another problem which I perceive is that most of you are still using very amorphous kinds of terms in describing the process of education in art and although they seem to have some general communication value, I still have no evidence that when two people talk about judgmental activities in art that they have any more than the grossest idea of what each other are talking about. There seems to be an almost unwillingness to become more analytical about the use of terms and this may be an unfair indictment but it strikes me that if you want to talk about very generalized, ill-defined terms as a practitioner, that's you're prerogative; but when you begin to conduct research it seems to me that you must force yourself to be more analytical about what you mean by various terms, perhaps, even arbitrary, and it strikes me that that kind of a point of view has not developed, at least among the people I have talked to. There also seems to be a continuing occupation with very broad, global issues, ones which I would content are unresearchable, at least at the present state in the art of research, and an unwillingness to compromise with what you would like to know and what you would like to find out under the present methodologies. I appreciate that there are big issues in art education that you might very well like to know about but I would contend that with our present tools we aren't able to answer them. So this is going to require some compromise with what we are now able to do with what you are really interested in knowing about. One final observation I would like to make and that came out of a question which was asked of me. Someone ask me "What does a methodologist expect of persons in art education?" "What kinds of skills and tools, etc., would someone like myself expect of a person in your field?" The general answer is all I really would expect from you is that you know rather clearly what it is you want to investigate. I don't expect you to understand the analysis of variance, necessarily, although it might be helpful; I don't expect you to understand scaling nor instrument construction nor a host of other technical procedures; but what I would expect is that you have a very clear idea of the phenomenon you wish to investigate. It seems to me that is the beginning point of any interaction between the two of us and if you are unwilling or unable to come to a methodologist with a fairly clear idea of what you want to investigate, then he is not going to be very helpful. He can raise some questions which may cause you to go back and think more critically about what it is you want to investigate but you have to bring the substance of the problem to him and he'll help you work out an approach, not the approach, but an approach and you will have to try it out.

Mr. Champlin: My remarks can be construed to be extensions of the remarks just made. My first caution is against a kind of arbitrary relativism, that is illustrated, for example, in the treatment of behavioristic psychology as a school of psychology whose relative position or value is proportinate to the number of schools that make up the map of psychology. Happily, behaviorism from a methodological point of view, and from a research point of view, is a methodological commitment about psychological subject matters and pursuits and a research minded person will perhaps want to turn to that school for that reason rather than sitting and listening to all the different schools, thinking that the soundest and the best school will somehow ooze out of an objective presentation of "all the different schools." So, too, with the question that was asked of me after my presentation, that this was an interesting position of philosophy and the individual would like to hear all the rest of the philosophical positions, but this suggests there are no criteria for selecting from among the positions or assessing the alternative positions in terms of what our interests are as people who want to conduct research into the materials and the problems of art education. It circumvents the problem of evaluation and the problem of the seminar to simply think of this as an exercise in "on-the-one-handing-it" and then "on-the-other-handing-it" through the materials pertinent to our field. So I have a caution against what I am calling arbitrary relativism when you use the term "philosophy."

A second caution I have, I think, is a solid reinforcement of Professor Lathrop's point, but I'm going to put it a little bit differently. I am going to start out by making a statement that a concept about the relative value of concepts and words is itself a concept and subject to evaluation. That is, a concept about the relative value of concepts is itself a concept and must meet the cannons of intelligibility in concept construction no less than the concepts disparaged by that very statement and what is my caution? Simply not to disvalue words and the focus upon words -- and not to disvalue general theory construction. You know Rousseau did write somewhere in Amiel "I hate books" but you know that was contained in a written document to be read by somebody. I know someone who made a good deal of money on a textbook in which he wrote "throw away the books." So, the point of the dilemma is there are people who say to you in words and in a conceptual framework, "Let's not pay attention to words and let's not pay attention to general theory construction" when actually the horns of the dilemma is to be found in the fact that they are directing attention into words and into concepts, namely those words which say you should leave concepts or you should direct your attention away from words. So I would be very cautious about the anti-intellectualism which could very well be reinforced in education, the germs of which are to be found in all fields, of course. So you see I'm not charging, I'm simply urging reflection upon this. If the object is an object of common purpose, and I think I stated this with Professor Woodruff, if the purpose is to gain common understandings, communications, shared understandings of these terms that we share, then I think we have that as a criterion for assessing the words and for focusing upon them in our field and we have that as a criterion for looking over our concepts and overhauling them so that they can more adequately perform the function of communication. For example, what is empirical and researchable, and this is now the technical part, depends upon a general theory of what can answer as an object of the scientific word or sign, a point made by Professor Lathrop in his paper, and if we don't have a general theory of this then the problem is left to common sense, as I tried to say in my own paper, or to the latest fashion in metaphysics, and I think any research effort in the human sciences and in art education is doomed at the outset without explicit attention as to how your subject matters can enter as an object of the scientific sign. And that's a focus upon words and the conditions that terms must meet. I suggest that what is needed in connection with this, and with promised proof of such investigation, is a controlling and commonly understood conception of art and aesthetic subject matters and if we don't have it now, as came out in our discussions, and in the absence of it, we must rely again upon adaptation of common sense discourse. So when you ask the question with all the proposals -- and here's the question "How do we devise and get categories and make distinctions in our subject matter?" The only answer is that distinctions and categories must be made in accordance with common sense distinctions. From common sense categories for 2,000 years, no logical class has followed, so we cannot establish relationships among these categories via any methodological cannons distinctive to the subject matter. One must turn to the principles of statistical inference and to the extent these are worked out you are working in a hypothetical deductive system, but the generalizations about the distinctive subject matter, such that you can make distinctions within your subject matter, are not forthcoming from instruments and tools, as Tumin was so clear about, and as I think was pretty well clarified in the statement preceding mine. We are left with a simplistic -- I quote Nagel -- Baconian account of science with an assiduous and cavalier collection of data, which just goes on and on, and somebody quoted my most technical way of putting it, which is, "One damned thing after another." I think that when we get a controlling and commonly understood theory of art in distinguishing our subject matter, we will be making many different distinctions than we are making now, and what we are labeling variables will be radically reconceived, and what we call our problems now will be dissipated into perhaps, in many areas, nonsense compared to the problems of a dramatic character that are promised by the possibilities of a systematic and controlling conception of just what it is that distinguished our subject matter as art educators.

My third comment, and this will be a quick one, is that I think that the conception that is operating, to a considerable extent more than I would like to see it operate of our subject matter, limits it or restricts it to a rather pedestrian account of what it is that is going on within art education as a curricular, administrative unit in this country, so that we tend to speak of our field as something that is going to fit into a curriculum that is already constructed, and I am sorry that I must say that I'm afraid that some of our resource people so conceived this, too. Some of the people that I've listened to, not only the resources for this group, they were specialists and resources for me, too, and I'm a little disappointed in the failure of some inquiries to take into account the exciting possibility that a theory of the subject matter of art education -- a theory of this -- a controlling conception of this -- may bring about a revolution in general curriculum construction. You see this is a radically different thing from saying that an adequate theory of art education will permit curriculum builders to fit it more adequately and to know what they are fitting more adequately into, their conception of curricular structure or their organizing of methodological structures, or ordering whatever is ordered in curriculum. I think the door should be left open to this possibility and I think that as I re-read Villemain and Ecker's papers and comments surrounding those, I think that built into those papers and that whole notion of qualitative problem solving, is not just a theory of art education conceived as an administrative curricular unit, now a status quo in education, I think it is a revolutionary concept that maybe curriculum builders and social scientists might come to learn more about their fields or be provoked into gaining questions pertinent to their fields, which I think would be a more defensible way of putting it. Those are my three comments.

Mr. Foshay: I think what I would like to try to do first is to deal with the question of what Professor Lathrop means when he says "Come with something clear." What does clear mean, you see? We, of course, talked this over today at noon as a matter of fact. We have shared a common experience and we are all referring to it, and I think all of us here in this room have shared this experience. The problem with research problems in this area, and I must say generally in the curriculum fields in education, is the unspecified global nature of the terms we are bound to use. Well, what do you do about that? For one thing I think that one has to respect those terms for what they are and at the same time recognize what they will not do. They are global -- that's not the same as saying they are unimportant -- but it is the same as saying that they can't be handled in any tight or rigorous fashion until they are made less than global. It is commonplace for people to propose even to themselves as the beginning of the development of a research project something that is very global.

My own first proposal for a dissertation to my advisor was that I was going to try to relate the findings of child development and the curriculum. And he looked a little stunned -- it left his mouth open -- he must have faced this one before and the upshot of a rather spirited brief conversation was that I had better go back and try again. Questions of this size and more or less of this type do come up. They represent, I suspect, even in the mind of the person who raises the question, not something to be researched so much as something to be comprehended in some fashion. And so what the research methodologist means when he says "speak clearly to me" it seems to me, is speak about things that can, in fact, be viewed by more than one person and understood to be the same thing. At the beginning it is just that direct. You have to ask, then, with respect to any great big question, first accepting the question or the intent the question represents, "Very well, what is the observable unit, what is the public unit?" public meaning simply that it will be viewed the same way by two or more people. Public in that simple, operational sense. Unit, it seems to me (I want to expand on this a little bit) since we are in a field here, as I understand from what I have heard this week, which is busy transforming itself from a rather purely deductive form, to a form that includes inductive modes of inquiry, and it is hard to shift the language as well as the stance that these things require. Since that's the case and we want very much to take advantage of what has been developed by indictive inquirers, we have first, I guess, to confront their term molecular as against molar questions. You have to ask what is the smallest unit of observation that is not something other than what you intend it to be -- that is still art -- or still relevant to the field and yet is verifiable in the sense that somebody else who wasn't part of your set of biases, would report the same thing you would report, that is to say, use the same words hopefully with the same referents, etc. Perhaps I shouldn't have to elaborate on this and yet it seems to me that this first, as I see it, prior question before inquiry is possible, for various reasons is a difficult question to handle. One has to satisfy oneself that the unit of observation exists and that you have come to agreement about it, that other people who don't care whether you do your research or not, would nevertheless agree with you about what the unit was. Well, that's one observation.

Now, another one of a different sort has to do with what I take to be emerging from this conference and what will obviously follow from the conference, it's some kind of a map of the field, some notion of the domain, or maybe a new notion of it or a transformed notion of it. The problem of locating your question in relation to other significant questions is, of course, always important in a strictly operational sense. That kind of location, your declaration of the context of your own question, guides you in your search of the literature. Or your search of your own experience. And, of course, may very well guide you in the design of the empirical research you want to carry on. Where is your question in terms of some general conception of the field of art education, a field which like many another field, like social studies for example, better than social studies, doesn't have any clear set of boundaries or any agreed upon array of dimensions or subdivisions. There were a lot of them talked about in the conference but the question of a generally agreed upon frame of reference, I gather, hasn't come up yet in the field, although my impression is that it is about to come up. Maybe it will come up during this week. In this connection I borrowed a way of thinking -- a picture from Ross Mooney who has always impressed me greatly as a teacher -- his notion of the -- well, never mind his notion I'll draw it -- this is a field and it is permeable and that's why it's a dotted line -- and inside it is a learner who is trying to get some place, reach some goal, and this, of course, is borrowed directly from representations of field theory. It allows for blocks, and more than one goal, etc. The idealized form of learning taking this view will be one in which the learner knew perfectly well what the goal was and had no difficulty getting there except just doing it. Notice that there is no place here for a teacher so one way of talking about this kind of representation is to say that any educational problem has to do with a learner trying to learn something under some circumstances and this represents the circumstances. The reason it is represented this way, and this is what I borrowed from Mooney, is that he thinks of a creative act as being synonomous with the life process and then reduces this to a cell and points out that a single celled organism has to have a permeable cell wall which has a way of including what is nutritive to the cell and excluding what is poisonous to it, otherwise it won't survive. So the problem of interacting with the context is a problem for any living thing and, suggests Mooney, any creative enterprise. Learning is in some sense a creative enterprise -- hence I borrowed the analogy, borrowed the idea. What then of the teacher, the teacher of these circumstances is in this context, hopefully doing things that are nutritive to this process. Where does this get you? It seems to me to represent one way, and I want to suggest another way in order not to imply any dogmatism about this way, suggest one way of laying out the questions that one thinks of as an art educator in relation to one another. Some questions have to do with the nature of the goal, in some abstract sense, "what is art?" Asking that question and meaning to answer it from the tradition of the answer to that question. Or, you might ask, "what is the art experience?" It's a different question and analytical studies that deal with this question would fall into this relationship with other possible questions.

You might also ask, "what do we mean by a learner in the art education situation?" and I heard some proposals this morning and yesterday that it seems to me dealt with this one way or another, that is you were looking at output, some paintings, some art products of children -- they were going to obviously appear in some variance and you are going to try to account for this variance one way or another. My impression is that this variance is a variance that has to do with learners and their attempts to carry on tasks. Well, experiments would presumably have to do with the learner's attempt to reach his goal but they would generally take the form, I suppose, of stimulus response situations, hence I call up to your memory another model, the simplest possible way of stating this, and you will recall from Psych I that this one goes into a lot of elaboration before you get through with it. I'll not go through the elaboration now, partly because I don't remember it. But then there is another model -- this has to do with the teaching situation and the focus is on the act of teaching now. Again from Mooney, he thinks of learner centered situations, he was talking in this instance about a model of graduate education. He thought that at least at the graduate level the focus ought to be on somebody trying to do something, make something, he might make a theory or an art product, and that it would be interesting, to say the least, to think of the learning situations in graduate education as focusing now on the student (maybe I should say student instead of learner here) the student trying to make something and around him is an audience of teachers, and now upon the teacher trying to make something and around him is an audience of students who are playing the role of teachers, friendly critics. So the constant focus is on the making of something, not on being didactic, for example. It seems to me that because of the nature of this field, which is saturated with the studio, saturated with the attempt to produce, some such notion as this might be productive for somebody to play with. Not that this is a research proposal, it is of course not a research proposal. It might have the effect of calling up some questions that otherwise wouldn't occur to one or putting some existing questions in some relationship.

Now a comment about the goal of art education. A good many of the proposals that I have heard or heard eluded to have to do with that, I suppose that further armchair examination of the nature of the goal of art education might be productive provided, of course, it lead then to some attempt to empiricise these goals, that is to answer the question "How can I tell when the goal is being achieved -- what evidence would convince me as a teacher that this student is achieving the goal -- what's public about what he does?" As a starter in this direction and also simply in order to offer another general approach to thinking about it, let's play with it this way. Let's call the general goal of art education "art experience" and then brea this up a little bit and see how it looks. Art experience presumably, for one thing has to do with "own" objects and "others'" objects, I mean objects d'art of course, and in some measure, in some way, with both public (and I don't know how to relate this but perhaps I can relate it this way) public and private experience. All this seeks to do is lay it out and so one can ask questions about a private experience which is by this definition, inaccessible to me with somebody else's object. And I heard Mr. Lanier proposing to go back to the old galvanometer, respiratory, temperature, etc., physiological measurements, because it interested him; I suppose that it would interest him because these would give an independent non-verbal report of some kind of a visceral goings-on, you see, something that is ordinarily not recorded. It would be interesting in the degree that such measures are reliable and of course they have a history and there is something known about such measures, it would be interesting to relate measures of this kind with measures of other kinds; measures of this kind with verbal reports, for example, or overt products or overt predictions or whatever -- anything that is overt. It might be interesting -- maybe it would be fruitless -- I don't suppose it would be quite fruitless to relate these with various combinations of own and others' objects. Others' objects of course relates again to a continuing theme of this conference as I understand it, the other theme being art appreciation, art criticism, art history and how shall students be brought to relate themselves to the objects that have been produced and that are publicly acclaimed. Now what I sought to do is two things; one of them is to cope, at least in a preliminary way, with this term clearness, you see, come to me speaking clearly; the other one is to cope in some fashion or to illustrate how coping might be carried on with respect to the question of where my interest, when my question exists in terms of some conception of the context, generally, of this field.

Mr. Lathrop: We were planning at this point to have an informal conversation among ourselves and that we will do. Are there any questions you want to raise before we begin about any of the three presentations? Objections -- comments -- rejoinders?

Audience: I understand you to be saying that it is important for us to be laying out the ground for ourselves, granted that there may well be competing grounds, but you're asking for these grounds to be sufficiently clear so that the competition among them can be perceived by all concerned. Am I misreading what the three of you were saying?

Mr. Lathrop: You were not misreading me. It's not important to me that two people agree on anything more than the fact that they are going to accept a definition.

Audience: May I add one further thing on this -- well, maybe I'll do that because I've been in this business for a good many years and I think that one of the things I myself recognize in the field of art education is the beginning of our capacity to be able to transcend the kind of individualism which we have suffered through and the difficulty in this, on the part of all concerned in this conference, I'd say, to move on to the level you people are trying for. It was not long ago when a group met like this at Penn State, presumably one of the more forward groups in art education and much of the discussion degenerated to the level of personality precisely because of our inability to do the kind of job you people are alluding.

Mr. Foshay: I think it is always true that if you can't talk about the thing, you'll talk about one another. I noticed in certain research groups I've been associated with that when the program is weak or unclear or something, we somehow get to talking about "Whither the institute? Where are we going, why aren't we more programatic?" This talk just disappears when everybody gets busy.

Audience: What would you suggest -- you gave some suggestions about innovation and the conditions necessary for its development. What do you think the conditions and patterns for the development of self-defining fields are in terms of the kinds of things you are talking about, which are really theoretical and methodological and at a very high level?

Mr. Foshay: My response to this will be pretty vague. My impression is that for any of these fields -- the fields at least that I am in contact with -- we have to develop ways of talking about the reality that are not really ways of talking about us, that is, we have this self-other problem with respect to our own field. Education is such a personal affair that our tradition is really a tradition of personal talk, so the problem is to discover a way of talking about things that are not us. Methodologically, it seems to me, we have been talking about this all week, especially in the course of Mr. Lathrop's paper, the problem of getting people to agree upon an observation is a way of coping with that problem, talking about an object outside of me. Now beyond this, Champlin emphasizes the necessity for explicit theorizing in confronting any array of objects, otherwise it is just one damned object after another. It is very important that one be as explicit as one knows how to be about what's entering into one's categorizing or sense of patterning or sense of lawfulness as it seems to exist out there, recognizing that the lawfulness is not out there. The things are out there -- the lawfulness in something that we impose upon them, and so there are rules of logic, I think many them are quite understandable, quite within our experience, and some will respond to further training, that have to do with how one may categorize and to what ends; for example, in order to avoid the taking of a predetermined or unconscious stance toward some data, verbal material, on the one hand and on the other hand, as a way of coping with my own ignorance, of how the data might be thought about, I once just began looking into a lot of children's talk in terms of the adjectives they used. I simply lifted out the adjectives and then without any further thought raised the question (I say really without any further thought, which is a way of saying that I wasn't trying to cope with my own habits here at all, just let them go ahead and operate) I categorized these adjectives and resorted the sentences according to what these adjectives were. What did they seem to be like? Were they adjectives of quality, or of valence, for example, and the like. What happened in this instance was that after I played around with adjectives awhile I found that I just wasn't seeing anything. It was more or less interesting but fruitless so I tried verbs and that was much more fruitful, for an obvious reason. Then I tried referents and then I tried predicates -- this is because I was once an English major, you know -- somebody else would have tried something else -- the big point here is that at least it got the show on the road and presently some categories began to look meaningful, and at a certain point I and my people working with me were ready to bring to bear some theoretical constructs on them. I say all this only because the process is quite obvious and quite mechanical and quite impersonal, which is, of course, important. Does this deal with it in any important way for you? My impression is that this is the way one builds a field, finally.

Audience: It seems to me you are asking for something quite different from the activity, we've been engaged in in our research. You're saying to us that we really don't know the relationship between what we want to do, what we want to talk about and some kind of larger theory that would make it clear to you what our problem was or would even make it clear to us. So I'm asking the question -- we have to build some theory or we have to get it from some place -- and we have to distinguish whether our field has a distinct theoretical consideration or whether its concerns are taken up in other fields. We have to become acquainted with these considerations; and what you are saying is we should begin -- so I'm asking you where, if you were going to give us some systematic way, where, as a field, where would you begin, what kind of things would you do?

Mr. Foshay: I, personally, would begin with attempts to describe the art experience in the degree that that experience can be dealt with in some public fashion. That's where I think I would begin. It is just because this is the stuff one works with and anyhow it is more interesting than the other elements and that's a pretty good reason providing one doesn't use it to rule out other elements. I might begin with the behavior of teachers because teaching, too, is an art and as Bellak like to point out, teaching can go on without learning -- it's intrinsicly interesting -- every one of us here I suppose has seen that happen. So one could look at the behavior of a teacher in its own right without reference to the learner. Sometimes it is very interesting to do so. What does the teacher think he is doing to himself, you might ask? And let's stop kidding about the learner, etc. One starts some where but one recognizes that either one has a notion of where this is in relation to some other map, or that one doesn't and that part of the problem is to use this starting point to discover a point of orientation, as any explorer might who didn't know where he was but knew he could go from there and come back there and so could use this as plot.

Audience: It seems to me that all three of you level a rather serious indictment without giving us any examples or any evidence to support those indictments and I'd like to know what you mean by a global concern that some of us have here and then contrast that with what you think to be the molecular.

Mr. Lathrop: One of the problems, it seems to me, that has not been addressed very well is the matter of criteria. There has been an unwillingness, it seems to me, in most of the proposals that I have heard discussed, to deal with the criterion on operational terms. You want to talk about an art experience, the problem of the effect of the art experience on the learner, and these are what I mean by global terms. It seems to me that those are unanswerable. What we need to do is to settle on one or more criteria for evaluating what happens when you present something to a learner. It, as Dale Harris, pointed out, is very frequently just a fraction of what you are interested in. But it's part of it, we hope, if there is any validity in it at all, and it seems to me there has been a reluctance to deal with criterion problems on the operational level which we must deal with in research.

Audience: Well, it is getting closer I suppose. Maybe I'm asking you to point to some particular example, to criticize.

Mr. Foshay: Let me make one up. Here's a research project in which you are going to compare the effects of two approaches to teaching by looking at the quality of the children's art product. Now, with respect to the quality of the children's art product, what you say is, or what somebody says, I tell you this is hypothetical although it relates to a number of actual proposals, what one says about the art product is "we are going to have three reliable judges look at this and rate it for quality." This is global, that is to say, you don't know what you have when you're through if you carry that kind of thing out. You have the ratings, maybe they all agree, but what they have agreed about simply doesn't appear. Suppose you then try to specify that, as some people have, a little more, and you say they are going to look at these art products according to four qualities -- I won't dare name these at the moment because I'm not close to the field -- but there are four qualities, three or four or five, some limited number of terms, which are very commonly used by art educators, indeed I dare say by art critics and artists themselves, qualities like, composition, like balance, I don't know what. But they are terms of that order. It's still global. There's a simple test of globality or imprecision in this that could be performed I think. You might ask, could you explain this to me, somebody outside the field, in such a way to make it possible for me rather quickly to become one of these reliable raters. If you could not, and at this level I am quite sure you could not, you see, because what you are calling up is a whole lifetime of experience with art objects that I haven't had, then it isn't precise enough yet so that you can make very rigorous statements about what has gone on. Now if the same thing happens with respect to the stimulus you are talking about, the teaching method you are trying to compare, and it ordinarily does, I defy you to describe a teaching method in such a way as to distinguish between a good one and a poor one of the same category, I defy you to. My impression is that we have to throw the word out, that we have to find something else, and not strategy either, some other way of talking about what teachers do. If the same imprecision applies there and you try to get around it by saying "well, we're going to have three observers and if they agree about what's going on then that makes it objective" you have still made it impossible to say anything very precise or generalizable so that somebody else could do what you did and replicate and expect the same results, or to put it differently, it is still very difficult to suppose that such an experiment so talked about would have predictive value. To add to this and to go back to the notion of a map of some kind in one's hand, if one talks about teaching methods and students' products without discriminating among students then there is an excellent chance that whatever difference you get can as well be attributed to the students as to the teacher, and so on it goes. This, I think, is the kind of problem one runs into. If you think it's tough in art, try it in mathematics where you would think it would be a lot simpler. It's very, very hard to account for the differences in student achievement.

Audience: I'd like to ask a question relating to this one. Just before Tumin left one of the charges he gave to some of us involved in research was that we recognize and encourage people in the field who are making other kinds of contributions besides experimental research. Their kinds of exploration are just as important as what we're doing and right now it is fashionable to be doing research. I hope that isn't why most of us are doing it who are doing it. But irrespective of that I would like to ask all three of you, wouldn't you say the criticism you are making would follow on any kind of inquiry that we're doing whether it's experimental or not? And that the need for definitions is extremely important if we are going to communicate with each other irrespective of our specific kind of activity. I got the impression you were saying in research this was necessary. It's broader than that, isn't it?

Mr. Champlin: We can track that back into the question raised before about the preoccupation with terms. I want a note of caution here, or rather qualification, preoccupation with words, is sometimes considered the latest fashion, too. A kind of game some people would refer to as a nit picking kind of a thing, and we get very impatient with this. Perhaps some of you have heard Bertrand Russell's way of dealing with this, with the traveler who visited the British shopkeeper and asked "What's the shortest route to Winchester?" and the shopkeeper called back to the back room and said "A gentleman out here wants to know the shortest way to Winchester" and the voice from the back room said "gentleman?" and the voice from the front rôom says "yes, gentleman," "Wants to know the way to Winchester?" "Yes, the way to Winchester!" and the voice from the back room, "The shortest way?" "Yes, the shortest way!" And the voice from the back room says, "I don't know." And what you said and I think this is a very important caution, that here the attention is so exclusively in getting somehow lost in the interest, even the language, that one couldn't care less about the problem. It wouldn't make a bit of difference as to whether the problem is solved or not solved. Now, when I suggest a concentration upon terms, I'm not suggesting this, because I'm asking that those terms be responsible to the materials with which we are working. Let me give you an illustration. Take, for example, creativity. A relatively recent definition for that in, I believe Lowenfeld -- one of the most exciting people in the building of your field and so I do him great honor I think by turning to his conceptions -- has it that creativity has aspects, I take this to be categories, divisions, what we mean by this, and two of them, if I reçall in one of the treatises I read, (I'm sure he didn't intend this, in terms of other things he said and he has said things since he said this but I'm just taking this as a particular example), under this, as I recall, ability to solve problems, and ability to think abstractly. These are two aspects and if you look at the definition of creativity, and these two as aspects, logically one doesn't entail the other. So you have to learn where those two aspects come from. Those two aspects, to repeat, are adaptations of common sense discourse so that anybody can come in with a rather sophisticated adaptation and list a whole range of aspects under creativity, Torrance for example, says you have to know what the aspects are in connection with which you want to use the term creativity and then use the term creativity in the absence of an adequate theory. For example, it is hard to determine whether the ability to solve the problem of broken homes is not an example of the ability to think abstractly and the ability to think abstractly is not, among other things, an ability to solve problems. And no rules are broken, absolutely no rules are broken by this because those do not follow from some controlling definition. Now to get the controlling definition of creativity means to confront the word, to confront the various interpretants the definitions, to see what subject matter those definitions direct us to in that they don't direct us to anything more than just more definitions, more terms and refinements of terms and synonyms upon synonyms. We just become lost in language, and we perhaps enjoyed it all, but I don't think it has a thing to offer for the field of art education. Take it now into the field of art education very quickly, to locate our own subject matter details, looking at some of the terms and contents not foreign to us, I think, but indigenous to us. And we turn to those with which we are familiar, we make adaptations of common sense discourse when we talk about painting, sculpture and architecture. The man on the street (I've never met him but that just makes me a little bit of a superior individual to use that phrase) any parent at a P.T.A. meeting knows this -- so that when one does illustrate or use anecdotal materials to discuss art education, one is literally forced to turn to common sense expressions or adaptations that are widely understood rather than technically built and systematically disciplined terms in order to do this job. If you start talking about race as an aesthetic event or as an artistic enterprise or mob violence, or the hatred that brought Kennedy down, then you might not get the communication simply because the definition of the subject matter of the field of art education enjoys the same status as the prior example of a conception of creativity and until we get refinements in such categories we are not going to get precise understandings, on account of our subject matter.

Audience: I would just like to raise a question, again in the spirit of humility that characterizes this conference -- you take the art experience -- well, the beholding of a work of art, the beholding of a painting, or a film or a work of architecture -- what do you look for? This is the question that immediately arises. What do you look for in beholding a painting? To answer this question, it seems to me, and maybe I've used the wrong words already, to know what to look for it seems to me, you would need some kind of notion of art to begin with. There are different notions available and some are exclusive, mutually exclusive, therefore it seems to me that if you want to conduct meaningful research that might have some practical applicability to a curriculum writer, why we should not perhaps adopt a notion of art and research it. But if I am correct, we have ignored this kind of realization, perhaps because we haven't turned to the problem of the concept of art, aesthetic theories in other words. Do you understand my point that I think perhaps this is an error we have made, not realizing this kind of issue in our research?

Audience: I have listened to so many good educators starting from scratch, which is what this implies, you know, saying I am going to make up a theory about this reality without recognizing the difficult of theory-making, for example, as itself a discipline, let alone taking an existing theory and trying it instrumentally to see where it takes him and perhaps taking another or making a modification. There are giants, of course, for us to stand on the shoulders of, though not such a big population of them as we would like. I quite agree with your point. I listened this morning, we both did, to a proposal in which, while the proposal hadn't been fully developed, my view of it was that the conversation simply took off right away just because the man had the beginnings of an experiment in mind based simply on Piaget's conceptualization of the children's ideas of space -- his book the "L'idee d'espace." Piaget is, of course, a potent theory maker, awfully wrong some people think, etc., but even as a point of departure, maybe you would agree with me that that discussion immediately was fruitful just because the theory making didn't have to be indulged in from scratch.

Mr. Champlin: I have two points, I think that a descriptive account of the subject matter is a necessary condition to evaluation and hence the methodological problem is stubbornly there.

Audience: My point is how can you describe the subject matter without some notion of what it is?

Mr. Champlin: Let me turn to another point -- when it comes to the question of general theory, one kind of general theory, which would perhaps account for that subject matter as an object of empirical and scientific research, and this can become a way you might evaluate different general theories if this is your purpose. Turning to a giant, the giant in my mind who wrote "Art as Experience," one can turn to him not to become a discipline, according to St. John you know, but to turn to him and to turn to his general theory and ask maybe a question: How responsible is Dewey's general theory of art to the sophisticated common sense statements that we can now be making in our particular field? And Dewey's theory of art is one of the most useless, in fact, I know of no theory of art education that comes out of Dewey's writing so much as comes out of the traditional idealistic tradition and rationalistic tradition. I think by and large the theory of art education in this country is not Deweyian. I think it is sense-realist primarily, because what Dewey wrote in "Art as Experience" is entirely different from how he accounted for art in his educational treatises. You will recall his educational treatise is composed of methodology -- I'm using this as an illustration of how general theory now enters or is relevant here. The Dewey general theory is methodological. It is concerned with means to ends and method. This is the theory of the human with its animal and psychological, to paraphrase it, aspects -- and that's the term he uses -- and then you will ask well, okay, that's the unit -- means, ends and method becomes a unit of curriculum, it becomes the unit for describing a child, it becomes the unit for describing teaching in the learning situation. What is a student? A bundle of means, ends, and methods. What is the teacher? A bundle of means, ends and methods. What is the curriculum? A group of means, ends, and methods, etc. And you ask "How do you decide which ones not to use?" And Dewey answers you: The general theory would be the method that pervades all these. But more important, not any particular means, ends and methods, such as a body of knowledge or a way of growing flowers, or baking a chocolate cake, or making a martini -- and I understand he did like martinis -- the most important thing is the method of problem solving, the activity, the procedures, and so the major criterion for establishing the curriculum is the method of intelligence, the method of problem solving. And what's this? The method of science -- the generalized characteristics of the method of science. Now what additional to that does he say? That's not art education. It goes on in experience but that's, if you will, a theory of science education, in the general sense. What else does Dewey want in his curriculum? Well, he wants that which will be provided by psychological explanations and he says this many places. Democracy in education, value of cooperative inquiry in grips with the problems of men, psychological understandings and sociological understandings and nowhere in these treatises does he enter with aesthetics as a category and methods in the arts -- nothing at all -- so we are left by Dewey's account, to turn to psychology and sociology to find a place for art in the curriculum that accosts the problem solving methods and situations. Now in "Art as Experience," and I'll end with this, he develops a notion that is another way of thinking. We think of quality, pervasive quality, as a control and so that's another kind of intelligence and now we have these two, and these two become the great units in psychology and sociology as a part of the other and the two big units if you put that together with his "Democracy in Education" -- and he didn't do it -- the two hats he wore -- that ends up with his conception of art as one of the most comprehensive theories of experience and, if you will, means and ends, that thus far, I think, has appeared. So where would the subject matter of art education be at this level? Why it would be in classroom physics, it would be a category for structuring our very conceptions of curriculum under what we understand learning to be -- child development, culture -- it is one of the most comprehensive conceptions of art, in connection with which the fine arts, are simply, not merely, you follow, particularly refined instances. Now there is a general theory and you can say well, let's examine this general theory to see how responsible it is to what it is that we are somehow singling out among all the possible subject matters, such as music, literature and all these other things we want to be concerned with and there is where the value judgments come in. I've said everything I have said, quickly, unfortunately unfair to you and to Dewey and to others but I have said it in such a way that I think I have tried to describe a methodological structure at a very high level of generalization and I haven't initiated any value judgment about that save to say that this general theory is of value for you to consider as a way of examining its relevance to your particular work and how it would provide conditions of value for the problem of evaluation.

Audience: In addition to ignoring a theory that we might research, we also ignore the direction in which the school seems to be heading in society at this time, which gets us into problems whether art ought to be in general education, whether it ought to be a critical response, in our research, or a constructive response. Such considerations of where the school is going, these are also ignored.

Mr. Foshay: I am glad you said this, for I want to respond to it. I think that if you will recall the triangle I put before you Saturday that the curriculum decisions might very well grow out of considerations of the nature of art education or of art and the nature of the child you are trying to teach and your best guess about the nature of society now, but I would like to use your word "tension" in this connection. That is to say, the curriculum would arise out of some kind of tension among these and I don't know what that means in particular except that it sounds to me like a possibly useful metaphor. I'm so well aware, aren't you, of the tendency of curriculum makers to simply try to placate the public -- there's no tension operating so you do something everybody is happy about. Well, as a society we are not happy about art, are we? We don't value art in the elite sense certainly the way any of the advanced European countries appear to do. Our art tradition is a puritanical, work-oriented kind of thing in which art seems to violate the ethic, you know, artists paly -- they don't work. And so this is the tradition which we're in business to challenge, to improve. Forgive me, I want to repeat a story. I got into a talk contest once with the Personnel Manager for Marshall Field at a conference in Chicago of superintendents, and he built a whole notion of education out of "give the lady what she wants" -- their store slogan. To which I could only respond that that isn't what education is for. Education is to give the lady not what she wants but what she ought to have and the educators damn well have to decide what this ought refers to, hence the notion of tension. That's one observation. The other one is that I am grateful to Mr. Champlin for his quick resume and very able one of Dewey's notion of experience as it applies to art and some other fields, for it reminds me of how utterly mischievous those theories have been as we have applied them. They have precisely taken our minds off of subject matter and I remember Sydney Hook's "Centrality of Method" in his chapter on education and modern man, in this connection, and how I myself tried to turn this into a curriculum theory at one point and thought it was, and so on.

Audience: One does not want to be obtuse, as Winnie the Pooh puts it, but I have listened now to three or four philosophers use the word qualitative without having that term at all delineated. We've been adjured to move toward this conception. I think this is an act of judgment on the philosophers' part. Until this term is elucidated and a methodology elucidated, I see no reson to heed such assertions. Thus it is a personal intuition apparently and not a sharable thing. The other comment refers to the fact that there is a history of empirical research on the criterion question in art, so that it is not as simple as telling us "You're not logical enough, etc." There are empirical connections built up which attribute variance to objects, judges, criteria, etc. This work needs to go on. Contrary to what you philosophers have maintained, it is not common sensical. It might well be that expertise as a prior condition for judgment may be perfectly valid -- or the only way -- in a field like art, but this does not take it out of the purvey of science. In short, there are attractive alternative positions.

Mr. Champlin: The term quality, I don't think we are going to either confirm or disconfirm the employment of the term. I think it is fair to say that in this case the term quality is being introduced within the framework of discourse a methodological category rather than a metaphysical, ontological, or some other category and it is to be understood this way. This is the way Dewey uses it in "Art as Experience," and inadequately, and our criticism of Dewey, notice that, is in the conception of the qualitative symbol group, and also a criticism, among others, of Langer's work, by Nagel and others, so there is a history of how it developed as a methodological device, as an explanatory device. It will either do or it won't do it. It will either be responsible to or not responsible to what it purports to be responsible to. Now the second half of your question has to do with the relative sophistication of the discoursing and theorizing going on in the history of art and art criticism and in the field of art education. If I leave anyone with the assumption that what I meant here by common sense is that what you have is nothing better than what anyone else has who isn't in the field then I must retreat very, very quickly. Now I have used phrases such as "adaptations of common sense, sophisticated common sense." I think there are refinements. I think that any general theory of quality must be responsible to some of these, what you might want to call substantive areas such as fine art we are sure of as being included in our field just as before astronomy because a discipline they certainly knew they wanted to talk about the moon and the moon wasn't created out of a discipline, it was floating around a long time before astronomy showed up on the human scene. Paintings were around a long time before we got disciplined theories of art. If this is what you're saying, I would say, yes, such statements, generalizations, propositions do exist. They are empirical, they are sophisticated and that anything that attempts to be a general theory, if it doesn't account for and isn't responsible for these things, isn't for me an adequate theory. It has to be responsible and fair to the data that you are now referring to.

Mr. Foshay: Let me respond to that with an illustration. One has to hope that the function of inquiry is to reduce whatever magic we are using, you know, whatever mystery we are using, or whatever personal referents we have been forced to use. If everytime I want to know whether something is good I have to ask somebody else's opinion then I at least am not making a judgment and if I don't know the grounds of his opinion then I'm simply trusting him on faith. I had an experience recently with a brilliant English mathematician who was working with a lot of us on a highly complex table of intercorrelations, 50 x 50 tables, 55 x 55, and he said, "Well, the error term for the intercorrelations is .04," and that was quite an announcement because it clarified a lot, and then I stopped to think, of course it doesn't clarify anything. I'll use it -- I trust him -- I'm not the mathematician he is. I asked some other people who I thought could understand what sounded like very obvious statements he made except that collectively they got away from me all the time, and discovered to my confort that they didn't quite understand them either except that it seemed reasonable that the error term was .04. Now this is one example that we want obviously to get away from. I wish my knowledge of statistics weren't so mechanical, you know, were more a logical affair. But another one that has always appealed to me was done in Illinois, by Arch Anderson. He got a lot of kindergarten teachers to rate children on real undefinable qualities, cooperativeness, honesty, optimism about the world -- five year olds, you see. The teachers all knew the children and they all said "nobody knows anything about words like that, they don't mean anything" and he got them nevertheless to rank the children on these qualities. The interesting thing was that the rankings were very comparable. The rank-order correlations were around .7. They were very high considering the fact that none of the terms were defined at all and the teachers said that none of them was definable. I'm still staying with this question of expertise and expert judges. You have a finding like this -- what does it mean to have a finding of that kind? It doesn't mean anything if all I know now is that there are four teachers who, if they know the same children, will rank them the same way, because I can't do anything but refer to those four teachers all unnamed in Arch Anderson's report. It does something else to have done that, of course, it does say quite clearly, kind of loud and clear, that whatever these terms meant, and we don't know what they meant, the teachers were using them as if they referred to the same observable lot of stuff, presumably overt behavior of some kind. What is done is to delineate the area within which a set of meaningful questions and observations might very well be carried on. I did this once -- I used this research with some other teachers who were dealing with equally undefined terms -- the same terms in some cases -- cooperativeness, helpfulness, you know, empathy, and got them to go through this exercise in order to convince them because this was the usefulness of Anderson's research, that they were indeed looking at the same thing and the problem was to find out what it was they were looking at. So this sharpened the question up no end. All you had to ask them was to remember what it was about a given youngster that made them rate the child that way, if they could, and they often could, and collect these events as a springboard for further observation, etc. I should think that something like this could very well happen with respect to expert judging in the case of art objects. While you don't know at the outset what the judge is looking at because he can't tell you exactly as a generalized sense of it, it ought to be possible to get him to talk about the elements and this should be I think a productive line of work.

Audience: The thought just comes to my mind that it may not be possible to provide criteria to untrained people to apply to the assessment of a work of art in such a way so that untrained judges agree with experts. I am thinking of, for example, if you had a group of wine tasters who agreed on an array of wine and identified the best twenty per cent in that group of fifty and then provided some criteria for the very good wine and then you asked untrained judges to identify the good wine, the very best wine that the experts had judged to be the best, this might not at all be possible for them to do, almost in the same way that a person untrained in physical science theory would be unable to perform an expert judgment on physical science theory because the necessary training had not been attained. So especially in the area of "qualitative" that is in the arts, it may not ever be possible to expect untrained people to arrive at the same judgments as people who have become sophisticated in the area.

Audience: Why don't we make that as an assumption for the moment, because it sounds as if it were true, you know, and then say well, where does this leave us? It leaves me at least speculating about degrees of training or degrees, nature, I think degree, as well as nature, of past experience relevant to this thing that you are now going to be trained to do. Wine tasting is a wonderful example because among other things wine tasters have an awful language, don't they, to talk about what they are judging -- bouquet and hard, and you know, a lot of words that convey nothing to me really at all.

Audience: May I give an example which parallels this, in some way, I think. There was an article in which the author seemed to be dealing with this particular aspect of quality and he was directing our attention to an exhibit in which Rauschenberg's "Bed" was there as an art object and the novice or person who didn't know anything about art came in and saw the bed and got in bed and went to sleep. And then the curator came up and woke the person up and said "get up, that's not a bed -- that's a work of art" and the person said "what do you mean that isn't a bed, why sure it's a bed -- it has a cover, a pillow, etc." and the guy said "Oh no, you don't understand, that's not a bed" the point being that there is something other than that kind of an identification which seems to go into identifying that thing as a work or art rather than a bed. And I think that his solution to the problem was that there is a whole history of art theory and works of art that goes into the identification of that thing as a work of art.

Mr. Foshay: There is this arbitrariness, isn't there, that allows me at one moment to say this object is some utilitarian thing and at another moment to say of this same object "I'm now going to look at it as a work of art." It is perfectly possible obviously to take these two stances. In some degree then a work of art is what you declare it to be. But the next question "Who are you?" "What are your opinions worth?" "Is your sensibility of any interest to anybody else?" I am reminded of the story of the three baseball umpires. Somebody asked these three men who were experienced how they called the close ones -- they must do it all the time -- and No. 1 said "I call them the way they are," and No. 2 said "I call 'em the way I see 'em," and No. 3 said "They ain't nothin till I call 'em."

Audience: Dr. Champlin, I wonder if you would comment a little more on the significance of the word "responsible" in the phrase "a theory being responsible to events." Why that word "responsible," in what sense is a theory responsible to observation?

Mr. Champlin: Insofar as it would permit one to account for those events. I think that here we are as art educators dealing with all sorts of things, everything from puppets to a whole range of particular sorts of things, and in our discussions of our subject matter we include propositions, finding such terms as painting, sculpture, architecture, etc., at work. Now a general theory for our field is responsible to substantive connections to the extent that it accounts for what it is we already have. Any general theory of art education does not account for cubism and we can make some pretty sophisticated statements about cubism.

Audience: Maybe I was looking for something that wasn't there but it seems to me the word "responsible" was a little too much.

Mr. Champlin: Well, methodologically responsible, logically responsible. For example, general theories of creativity are not for me logically responsible for "ability to think abstractly," one, two, the ability to solve problems. Theories of creativity do not permit me to distinguish these such as I could put the word "and" between the two of them. I know on other grounds that I can't put the word and between the word Detroit and the people of Michigan. I can't talk about the people of Detroit and the people of Michigan because there is a sufficient precise definition of the state of Michigan that permits us to say that Detroit is included in the class of objects which in turn the state of Michigan is divided into.

Audience: Mine was a very important, probably naive, sort of thought. And it was probably because I don't know the tradition of use of words in philosophy. In one sentence you use responsible and account to -- more or less synonymous -- and I was wondering if they were. How did the word responsible get to be used in this connection.

Mr. Champlin: Having the role of a methodologist I had to do this. I might add this one thought -- that I teach aesthetics, philosophy of art, probably to one of the hardest-boiled audiences that it has been my pleasure to have in the last ten years. I teach once a day, and I walk out there and they are bristling -- not with antagonism, they are ready to pounce and they are people who are going into sculpture, they are going into pottery, people at Cranbrook Academy of Art, and they take a look at every theory and if it doesn't account for what they are doing they just pick up their portfolios and walk out. And, incidentally, they reject and have great difficulty with the Deweyian approach because it includes so much besides what they are doing, they want further refinements that permit them to get their places responsibly account for within the Deweyian theory which Dewey has failed, quite frankly, to do.

ART EDUCATION SEMINAR

DR. HARLAN HOFFA
U. S. Office of Education

In a sense, this paper is kind of "ashes to ashes and dust to dust"--------

For the first time in many years I must confess to a certain sense of uneasiness in addressing a group of art educators--there are at least two reasons for this--In the first place, having heard most of the papers which were read in the course of the past week I am filled with awe and admiration at their quality, their insights and their comprehensiveness. The awe, I might add, is for the consultants and the admiration is for my colleagues in art education. I have an unshakeable feeling that my presentation this afternoon will seem rather pedestrian by comparison dealing as it does with the more earth-bound issues which are inherent in my newly found career as a bureaucrat. In the second place, I have begun to have a measure of understanding of what Ralph Beelke meant the other day when he spoke of the loss of identify which sometimes comes over an art teacher, when he removes himself, however unwittingly, from both teaching and art--I guess it is, perhaps, something of a Washington syndrome. In any event, the view from my vantage point in the Office of Education is both broad--in the sense that I have had the opportunity to see many art programs, but, at the same time, rather remote because I am not really involved intimately in any of them. In spite of these problems, however, and perhaps because of them, I think that I have been involved in some rather unique undertakings in behalf of art education in the past year, on which I would like to speak to you now.

For those of you who may not be altogether sure of the exact place of the Arts and Humanities Branch in the organization of the government, let me sketch it in at this time. The Arts and Humanities Branch is part of the Division of Laboratories and Research Development, which is in turn part of the Bureau of Research. The Bureau of Research is one of four such bureaus which, between them, blanket the lion's share of the Office of Education's programs. The chief administrative offices of these bureaus are Associate Commissioners of Education who work directly with the Office of the Commissioner. Mr. Francis Cupple, the Commissioner of Education since last week, the under Secretary of the Department of Health, Education & Welfare for Education is directly responsible to the Secretary of Health, Education & Welfare, John Gardner, and he as a Cabinet officer is responsible to the President. On paper it seems to be only a few short steps from my office to the White House--although obviously, it doesn't always look that way from the inside.

Those of us who work in the branch must almost always wear two hats. First, as representatives of the government in our respective professions, the capacity I am serving today, and secondly, as representatives of our professions in the councils of government. In either role, however, we consider ourselves to be professionals first and foremost. For instance, I am an art educator who happens to work for the government and my counterparts in music, theater, humanities and museum education, feel likewise about their responsibilities. I might add that the extent to which this concept pervades the entire office of education is rather startling, especially among the more newly appointed members of the staff. This I might add is an extremely healthy sign. The placement of the Arts and Humanities branch in the hierarchy of the office is by itself an almost sufficiently clear explanation of our central function. We work largely with research programs, most of which are conducted under the terms of the cooperative research act. There have been some extraordinary developments along these lines in recent months and I would like to speak of them, at least in some measure. I should add one word of caution, however. These new research developments, as well as all of the other innovations in the relationship of education to government, are still in the process of evolving and that of which I am speaking here today may or may not evolve in exactly the form which I indicate. The passage of legislation by Congress is only the beginning of any new governmental program. The actual implementation involves endless meetings with legal authorities, the preparation of the operational programs, the recruitment of qualified staff to conduct them, the writing of guidelines and regulations, the preparation of announcements, trial runs of programs on a small scale, and an enormous number of other details, all of which means that the time lag between the passage of legislation by the Congress and its actual implementation is certainly no less than three months. We are currently involved in these experimental and developmental phases of the implementation process insofar as the Elementary and Secondary Education Act is concerned, and we will probably continue to be so involved, at least until the appropriations bill is passed at the end of this month or early next month. I believe that this new education legislation represents a genuine milestone in federal activity in behalf of education. The bill as a whole has five parts and the condensation of these parts may be found in the reprint from the American Education which I have just distributed. Of the five titles, Title IV has the most far-reaching consequences for this audience since it refers to the strengthening of educational research. I have earlier referred to the Cooperative Research Act and would now like to point out the ways which Title IV uses this prior legislation as a point of departure. In the first place it expands the eligibility for federally supported research activities from colleges, universities and state departments of education, which have long been considered eligible, to include professional organizations, museums, and any other private or public non-profit organization, local school districts or even (on occasion) individuals. It also provides for the writing of research contracts with profit-making institutions in the same sense that the Defense Department might write a contract with General Motors or Aero-jet General. The grant programs are exclusive to non-profit organizations and institutions. The opportunity for the office to write research grants or to give research grants, as well as to write research contracts, is also an innovation. But perhaps more importantly, the bill will establish an unprecedented, new kind of educational agency. Now by this I mean the so-called regional and national educational laboratory. And again I would like to refer you to the material which I passed out earlier for the details of this act, or this portion of the act. The implications which these laboratories represent in the changing posture of the Office of Education toward sponsored research, is fully as meaningful as the simple fact of their establishment. The regional and national system of educational laboratories represents a giant step beyond the support of project research and toward the support of broad programs of research. Again to paraphrase this a bit--the Office is beginning to frankly be snowed under (it is snowed in other ways, too, from time to time but that's another story) with project research requests and one of the intentions of both the R & D centers and of the Regional and National Laboratories is to provide the opportunity for agencies outside of the Office of Education to be involved in broad programs of research and to begin to interrelate research projects in a programatic way rather than each separate project being considered a discreet and clear-cut entity in its own right. The previously existing Research and Development Centers, of which there have been four, were the precursors to the regional labs but their scope of activity was nowhere near as wide nor was their base of control as broad. In fact, the laboratories depart so thoroughly from prior educational research patterns as to make comparison difficult, if not impossible. I can only speculate on what the ultimate configuration of these labs might be and what their possible consequences to art education might be. Certainly their role in the dissemination of research findings will be far-reaching. I also expect that their staffs will ultimately take on the character of medical researchers and clinicians who are far removed from general practice and daily routine as the educational researcher will be from the classroom. Obviously, this is not an unmixed blessing and I'm not promoting the concept--I'm simply making a prognosis. Last, but not least, these laboratories will put the federal government in education in a way which is as fully intense as that of the Atomic Energy Commission or the National Aeronautics and Space Agency, although certainly without the exclusivity which these programs represent. As perhaps a parallel to what the regional and national laboratories might be, I might point to the Brookhaven National Laboratory which the Atomic Energy Commission runs in cooperation with a number of colleges and universities. It is this kind of an operation which will ultimately evolve. I sincerely believe that, although the impact of the educational laboratories will be far-reaching, they do not necessarily represent the most fruitful avenue for art education to follow, although if there is a laboratory in your region you will be foolhearty not to try to become as intimately involved in it as possible. I would rather recommend the channel which the expanded Research and Development Centers will present. As of this moment everything which is possible in a laboratory program, including instruction, will now be possible in the expanded research and development center authority. The essential differences between the laboratories and the R & D centers are these: First, unlike the labs, an R & D center is expected to focus upon a single constellation of problems. Secondly, unlike a laboratory, it is not bound to serve a discreet geographic region and it may be based at a single institution. It is unlikely that an R & D center could be established for art education alone. However, I think it is perfectly conceivable that a center could be structured around the concept of arts education (using the plural) including the visual, performing and literary arts, or around perceptual education, or around aesthetic education or around any other related construct. At the moment I cannot anticipate more than a single such center and probably never more than two or three in these fields at any given time. Still, the potential for research in our field that even a single center could instill, is enormous. It could encompass the combined impact of all present research plus much, much more in terms of interdisciplinary activity between all of the various arts. I think that perhaps the best way for me to answer inquiries about this--rather than to try to go into elaborate detail here--would be to speak to you on the basis of my information, informally, in a question and answer period. I would now like to move on into some areas which I feel are research needs in art education.

In the first place, I see the need for many, many more researchers in art education and, in order to provide these needed numbers, more research programs. I should like to see centers for the training of researchers, and again this is something that the new education legislation could provide under the research training authority. I would like to see sufficient familiarity with research terminology on the part of all teachers, even people who just graduated from undergraduate programs, to permit the implementation of findings reported in the journals. All too often, I'm afraid, the teachers who are actually in the classroom don't read the journals and one of the reasons they don't read them is they are not equipped to do so; they are simply not equipped to be able to know all that there is to know about research. I'd like to see the development of a great deal more idiosyncratic research in methods in art education, methods which do violence to neither the objectivity of the researcher nor the artist's subjectivity. I'd like to see a basic understanding of research procedures for all who hope to do research including, above all, the distinction between objectives and procedures and criteria. Very often we receive research proposals in the office which seek to investigate areas which are sorely in need of investigation, which are prepared in a wholly commendable fashion, and which build a tremendous structure of objectives, perhaps going on for six or eight pages. Then, when it comes down to procedures, when they indicate what it is they are going to do and what is they they are asking the government to support, the procedures are spelled out in about three sentences. This is unfortunate because the time and effort which is devoted to the first part of the paper has obviously been a labor of love and yet is shot down simply because the reviewing personnel, either in the office or our consultants, do not know what is intended. The same thing goes for statements of criteria. So I think in this one area alone is a tremendous need for reeducation (or the simple initial education) of people to become researchers so that they understand the difference between an objective and a procedure and a criteria. I would assume that this would be reasonably clear to most people contemplating research but the evidence doesn't indicate this. At the same time I would also like to see more ready information available on the simple mechanics of preparing a proposal; budget structure, and who is able to sign for an institution, and these rather pedestrian and mechanical kind of operations.

The second need which I feel is for better dissemination of research findings. The fruitlessness of much research in the profession testifies to this need. I also believe that the dissemination should be a two-way street which incorporates a feed-back of results to researchers as well as the reporting of researchers efforts to teachers. Certainly both elementary classroom teachers and art teachers can do much to isolate problems to aid in testing hypotheses and establishing exemplary programs. I also believe that another research journal should be established. I am thinking of a journal which is quite different from Studies in Art Education, which represents but one approach to the reporting of research. I am thinking of a journal of interpretation and, if you will, popularization of research. Perhaps one approach would be to borrow an idea from the Department of Agriculture. The county agent fills an important role as an intermediary between researchers in agriculture and the farmer in the field, and this idea is one which I believe that education could very well copy. As an example, it may be possible to set up a County Agent in Education, someone to interpret, popularize, to implement the research findings. At the Tallahassee seminar, Marylou Kuhn suggested that the art supervisors could very well take on this responsibility and provide for the fulfilling of a genuine need.

I would also like to see many more exemplary classrooms and exemplary programs (lighthouses, to use a term that was used earlier today) which would provide for demonstrations, implementation and testing of new teaching materials, curricular patterns and other research findings. Also they could perhaps serve as one means to promote educational innovation. I think that there should be much more interdisciplinary research in the arts and also more interdisciplinary research in which art educators would work with historians and psychologists and sociologists. Certainly the impact of the past week of interchange between art educators and people from other disciplines is ample evidence to the enrichment which such an approach could follow and, yet, very few art educators are willing to take on the responsibility to sacrifice anything of their own individuality to work with people from other disciplines. I sorely feel that this is needed. I feel that there are several curricular programs that could be established--experimental curricular programs. One, I think, is for a research manager in art education. Someone who could assist the artists or art teachers, to undertake research projects, who could help them prepare their proposals for the budgets, who could absorb some of the report writing or editing, the preparation of the vouchers, who could coordinate certain related research projects, could locate consultant services, could translate research into basic English for publication purposes, someone who could work with copyright problems, or other snags which may emerge from possible publication, someone who could write the brochures and interpret the instructions and in every other way, not only make it possible or perhaps even inevitable, that the researchers will involve themselves as deeply as possible in research. I think that there is a great deal of need for study of the interrelationship of various public and private agencies of the arts; museums, art centers, art schools, adult education programs. Generally speaking, these various institutions for education in the arts operate pretty independently of one another and I think that a correlative effort must take place if we are not to explode in all directions at once. I think that there is a need for the preparation of people and the training of people to work in museums, to work in art centers, to work in conjunction with State Arts Councils, to perform in a sense something of a role that I'm doing at the Federal level, but at the State level. In other words, I think that art educators should have their own representatives at the State level. I'm your man in Washington, but I think that there is a crying need for art educators to have their needs clearly represented across the government spectrum.

I think that a great deal of research needs to be done in teacher education. We know little about the relative classroom effectiveness of the Bachelor of Fine Arts student, who has a minimum of education courses, the typical art education student, with a broad spectrum of knowledge and information, and the liberal arts graduate with only a smattering of studio and education courses. I think we each have ideas and notions about this but the simple fact of the matter is we don't really know which is most effective under which programs. I'd also think that we should begin to think in terms of certification policies at a different level. In other words, most state certification is effective for grades K through 12. I'm not sure that this is necessarily the best approach. Most certification is very broad and again I think that perhaps it should be possible for us to certify teachers to work in art criticism, art history and perception approach without necessarily having the same qualifications as a person who teaches in a studio operation. So I think that the whole problem of certification needs a great deal of inquiry, not only from the point of view of finding out what is, but in finding out what might be, and breaking out of the pattern of a single class of certification for all teachers. I think a great deal needs to be done in the retraining of teachers.

Another thing that we need is simple, basic, statistical information. The Office of Education has a reputation of being a warehouse full of filing cabinets full of information. And yet, the simple fact of the matter is that I haven't the foggiest notion how many art teachers there are in the United States and there is no way of knowing. We don't know how many students elect our courses or for what reasons. We don't know what range of requirements exists or what support, financial or otherwise, is given to our programs. We don't know what happens to the graduates of our schools, how many of them remain in the profession, how many go elsewhere. A good deal of inquiry needs to be made in terms of systems of keeping this information current. One of the problems with statistical data is by the time it gets into print it is out of date and I think that some kind of system should be developed where you can get an instantaneous input and output. A great deal of inquiry also needs to be undertaken in the field of art history and art criticism in terms of the preparation of teaching materials; books and slides, reprints, reproductions, etc. Most of this material is entirely unstructured and it is frankly difficult for most teachers to use and I think that a great deal of work needs to be done in the simple preparation of teaching materials to enable the teacher who wants to develop this kind of program to do so in a fashion which would not necessitate spending all of his time digging through slide cabinets.

These are several notions which I have, none of which are original, most of which have come out of discussions with other people and I heard several of them discussed earlier today. One last point I would like to touch on, however, is one that was much more ably presented by the three gentlemen on the panel earlier this afternoon. I think that work should begin on the designing, validating and application of objective devices to measure art learning. A preccurser to this is, of course, a distinction between the various kinds of art learning. This is not really a problem for hard-nosed research. It is much more in line with philosophical inquiry, but until we undertake this inquiry, this statement of values, of what it is we are teaching and why--until this is made clear, no really objective inquiry into the measurement of learning in art can possibly take place; because every time somebody talks about the measurement of learning in art they are talking about something different. I think the time is past when we can afford to function with each person having his own operational definition of what he considers to be learning in art.

RESEARCH PROPOSAL REPORTS

Abstract - RALPH BEELKE

Title - To develop a curriculum and/or curriculums in art for elementary school and junior high school which would be sequential and cumulative and which would be based primarily upon the nature of art as a field of inquiry and of knowledge.

Procedures:

Step I. Identification of Subject Matter - Identification of the basic ideas and concepts which distinguish the visual arts as a mode of knowledge. Artists, art critics and art historians, as "scholars" in the field, will be called upon to identify the basic themes and principles which make up the basic structure of art. Techniques: Conference and interviews.

Step II. Development of Curriculum Design and/or Designs - Adaptation of identified subject matter to curriculum design by art educators and curriculum specialists. Involved here is the sequential placement at grade levels of ideas and concepts, the teaching of specific topics and skills, the determination of what can and cannot be taught sequentially, etc. The possibility of different orientations is also involved, i.e. studio oriented, history oriented, appreciation oriented. Techniques: Conference and workshops.

Step III. Implementing the Curriculum Design and/or Designs - Designs must be tested in school situations to determine effectiveness and validity. Involved is the selection of schools, the familiarization of teachers with the program, carrying out the program and developing a program of evaluation including instruments to assess progress, learnings (factual and attitudinal), etc. As the program is implemented, gaps in knowledge and in method should become apparent and suggestions for needed research, for new approaches, etc., should be forthcoming.

The proposal is broad in outline. Each step includes several additional steps, each detailed, but each can be viewed in relation to the perspective of a total plan.

Abstract - LAMBERT BRITTAIN

Title - An Investigation Into the Character and Expressive Qualities of Adolescent Art

Introduction:

The area of adolescent art is filled with confusion. Little is known about the natural or normal art expression of the 12 to 15 year old. In contrast, child art is a term that is meaningful to every teacher, parent, and psychologist. We know a great deal about the forces that underly child art, its developmental stages, its distinct attributes, and can see in child art a reflection of the child himself (Lowenfeld and Brittain, 1964).

Most adolescent art that is generally available is the type of product that has become associated with the junior high school. Although there are some exceptions, most art programs at this level tend to emphasize teaching skills and techniques aimed primarily at developing an adult visual concept. To a great degree, drawing boxes above and below eye level, making monograms, or painting a still life is the extent of adolescent art. However, a look at the secret drawings in a notebook by any twelve or thirteen year old quickly reveals a vital art that is concerned with such "questionable" topics as sex, rebellion against adults, and satirical cartoons.

Purpose:

The purpose of this research is to determine if there is a discernable adolescent art with distinct attributes of its own that make it neither child art nor an imitation of adult professional standards. There is clearly a music that appeals to the adolescent, and there is an indication that the aesthetic taste of the adolescent differs from that of either children or adults (Holland, 1955). The importance of uncovering a natural form of art expression for the adolescent is obvious in its use for the teacher and the psychologist as a prerequisite for curriculum planning. An hypothesis might be simply stated: there is an art form that is distinct and expressive of adolescent youngsters.

Procedure:

It is proposed that approximately one-hundred drawings by adolescents be collected from many sources to include a wide range of subject matter, from secret drawings to school projects. From these will be selected the ten pictures which elicit the "best" responses from adolescents to such questions as: What do you suppose the artist was trying to do? Why do you suppose he/she drew it the way it is? What do you think could have been done to improve it? This attempts to bypass the problem of the self-consciousness and reluctance of the adolescent to exhibit or discuss his own work.

These ten "best" drawings will be used as a stimuli for recording comments about adolescent art by 500 adolescent youngsters distributed in the 7th, 8th and 9th grades. The stimuli will be administered to an equal number of boys and girls individually, and in small groups.

Analysis:

The responses will be tabulated and several directions for analysis may be fruitful. 1) The variety and quality of responses should reflect the projected feelings, emotions, or images of importance to the adolescent population. 2) A comparison of the stimulus drawing and the recordings of students' comments should provide information about the need for the development of skills and techniques or the degree of the satisfaction or dissatisfaction in adolescent expression. Some current research indicates that growth or change in art expression at this age is nil (Frankston, 1963). 3) If the responses gathered reflect qualitatively different characteristics from the traditional patterns of art forms for this age group, a continuum of developmental characteristics of art expression would be hypothetically possible to plot or graph, thus forming an extension of norms for child art through the adolescent period.

Abstract - HERBERT J. BURGART

Title: The Development of a Non-discursive Measure of General Creativity

Objectives:

To explore, develop and refine non-discursive models of general creativity measures which would be applicable to groups/individuals from childhood through adulthood.

To build upon findings from studies directly related to the development of non-discursive measurement and explore non-discursive testing possibilities as related to existing general creativity literature.

To add to the general research, literature, basic information regarding non-discursive measurement.

Specifically, to submit experimental efforts in the development of a non-discursive creativity measure to pilot and general population groups in order to establish correlation with existing discursive measures and other subjective devices in current use.

Procedures:

1. Construct non-discursive measure(s) as derived from existing visual-verbal tests.
2. Simultaneously, explore general creativity literature for other hopeful avenues of approach in developing a non-discursive creativity measure.
3. Establish a pilot population through discursive testing procedures to which later experimental non-discursive models may be administered.
4. Establish supplemental populations for replication purposes.
5. Make use of feed-back techniques from on-going data analysis in structuring project direction.
6. Secondary questions regarding general usefulness, breadth of application, economic feasibility, etc., to be set into sub-research designs and further explored toward refinement and/or rejection of experimental measures.
7. Time permitting, a final replication undertaken ensuring adequate possibilities for depth analyses and interpretation.
8. Completion of final project report.

Abstract - ROBERT C. BURKHART

Title - The Analysis of Major Sets of Instructional Conditions in Teacher-Learning

Problem:

The major purpose of this proposal is to improve our understanding of teacher-learning. This study is built around an analysis of the three major sets of instructional conditions in which we learn as teachers.

1. Systems of Teacher Evaluation
2. Phases of Instruction Within a Lesson
3. Sizes of Student Group

Objectives:

Up to the present, the focus in teacher education programs has been upon student-learning and little has been done to make teacher-learning a meaningful idea. The fundamental idea behind this research is how to train prospective art teachers and supervisors to think effectively in terms of teacher-learning. Therefore, one of the requirements of the teacher-learning experience is that it makes teacher-learning traceable in its relation to student-learning in art for both the teacher-in-training and the supervisor. To achieve this objective, each instructional period is recorded on TV tapes and a record of student art activity is recorded on time lapse video tape sequences so that teaching behavior and art activity can be reviewed and analyzed as a means of improvement.

Teacher evaluation sessions are separated according to four methods of review and analysis. The four methods which comprise this principle variable:

1. Self-Evaluation: self judgment
2. Self with Critic: self with a more experienced individual judging him
3. Self with Another Teacher-in-Training: exchange of instructional experiences with peer
4. Self with Demonstration Teacher: exchange of instructional experiences with a more experienced person.

The central control conditions under which this variable is studied are two:

1. Instructional sessions are separated according to phase of instruction within a lesson
   - a. Presentational - Introduction to lesson
   - b. Studio - Work period
   - c. Evaluative - Analysis of student results
2. Instructional sessions are also separated according to sizes of groups:
   - a. Individual student - one student
   - b. Small group - four students
   - c. Large group - twenty to thirty students

The question being asked is what differences in teacher-learning occur under these three sets of instructional conditions.

Procedures:

1. Instructional interaction is 15 minutes. This is the full length of the presentational and evaluative phases, and the first third of the studio phase.
2. Teacher-student interaction occurs in only one of the three phases. In those two phases in which the student works independently, the student writes on specific forms for feedback purposes. While the student works during the studio phase, 10-second sequences at 2-minute intervals are made on video tape. Non-instructed sessions are proctored.
3. There are four review sessions for each teacher-in-training.
4. The review session is a 25-minute portion of the total analysis period which begins by reviewing TV tapes of teacher-in-training instructional activity. Following this, time lapse sequences of the studio session are shown and student responses are read aloud. The teacher-in-training tries to identify and indicate any teacher activity needing change. Supervisors participate.
5. Immediately following the review is a 35-minute analysis period in which activities can be re-examined and both teacher and supervisor may suggest alternative courses of instruction.
6. An analysis will be made of teacher practices and student-learning in art. The teacher will be rated on gains or losses in practices found to be related to student-learning in art. The effectiveness of teacher-learning will be determined by analysis of variance techniques.
7. This research is planned for 3 years starting January, 1966.

Abstract - LAURA CHAPMAN

Title - A Pilot Descriptive Study of Responses to Different Types of Artifacts

Objectives:

The purpose of this study is to describe some aspects of the process of discriminating among artifacts. The study will utilize a forced-sort technique and four differing sets of artifacts in order to obtain three kinds of data: a profile of visual discriminations obtained by coding the artifacts and tracking the groups into which they are placed; a profile of the verbal responses which accompany each sub-grouping of artifacts; and a time-response record to describe points of apparent difficulty in sorting artifacts. These data will be analysed in order to answer such questions as:

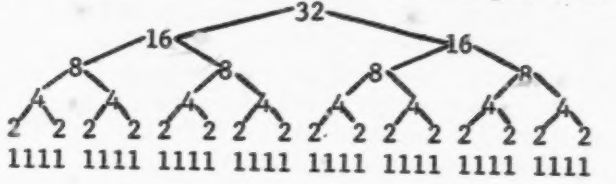
1. Do differing types of artifacts tend to elicit differing types of response, regardless of the order in which they are presented, regardless of subjects?
2. Are similar patterns of visual discrimination associated with similar patterns of verbal response?
3. Do some arrays of artifacts appear to be more difficult to discriminate among than others? Is there evidence which might be used to project a hierarchy of "difficulties" among these or related arrays of artifacts?
4. Do any of the key variables, i.e., task difficulty, verbal or visual response profiles correlate significantly with available personality or scholastic measures?

Procedures:

Subjects (initially a convenience sample of college art students) will be assigned to four half-hour treatments in a counterbalanced design. Each treatment will require the subject to sort one of the following arrays of artifacts into a forced distribution. Following each sort, the subject will be asked to give the main reason he grouped the artifacts in the way he did. A completed sort within the half-hour period will yield 31 verbalizations for each of the 31 forced discriminations the subject makes. An array will consist of one of the following sets of artifacts:

32 black & white photographs: interiors of Gothic cathedrals
32 pencil drawings by second graders: still life
32 colored reproductions of paintings: random selection
32 dime store artifacts: figurative ceramic planters, figurines, jewelry, and plastic toys (soldiers, monsters, dolls).

The forced choice distribution of the 32 items in each array can be represented as a decision tree which 1) provides for tracking the group into which an artifact is placed and 2) associates with each artifact a sequential "history" of the verbal responses it served to evoke. Thus, 32 objects divided into 2 groups of 16; each group of 16 divided into 2 groups of 8; each group of 8 divided into 2 groups of 4, etc.



Verbal responses will be content analysed on the basis of Aldridge's classifactory scheme (with post hoc modifications if necessary). Appropriate estimates of realiability will be obtained for the content analyses. Run tests (or more powerful techniques if available) will be used to determine patterns of response.

Analyses of variance and correlational techniques will be used to assess the extent to which subject differences, treatment order, and types of artifacts influence patterns of response. Individual profiles will be examined for further qualitative information.

Abstract - ROBERT D. CLEMENTS

Title - The Effectiveness of Two Content Variables (Form and Feeling) and Two Method Variables (Teacher Talk and Student Talk) in Teaching College Freshmen Art Appreciation

This study will attempt to assess the relative effectiveness of two content variables and two instructional methods for the teaching of art appreciation to college men and women. In this area, ferment and controversy exist over meaning, value, techniques, and criteria. The purpose of the study is neither to build a theory of aesthetic decision nor to construct a test, but to examine contents and methods which can be important conditions for the ability to make discriminations and statements about art. For the purpose of the study, appreciation is considered to mean awareness of design relationships in the art work and empathy with the affective mood or meaning of the work.

The operational criteria used in this study to measure ability to appreciate art are, first, the extent to which the student can articulate in his writing, his awareness of a work's formal and affective attributes. Short essays, which the students will write about a projected slide will be the source of pre-test and post-test norms to be gained by a "content analysis" procedure.

A second range of criteria involves the extent to which the student can select, from comparable pieces of art, the more aesthetic work. Test of picture preference formulated by Graves and by the Investigator, and the Beittel Art Acceptance Scale, will be used to gain pre-test and post-test measures.

A third set of criteria concern the frequency and intensity of instances in which the student is personally aware of doing "art appreciation". Three months after completing the course, students will be interviewed and asked how often and how much they have made use of art appreciation skills learned in the course.

The content approaches and teaching methods all aim at the ability capable of being demonstratedin formulating aesthetic decisions. In content one, the substance of the lecture or discussion will deal with objective formal qualities such as balance, rhythm, and patterns of shape, color, space, etc. In content two, the substance will deal with what the work "means" to the viewer and how it affects him. In method one, the teacher makes assertions about works of art in regard to its design qualities and affective qualities. This is widely known as the lecture method, in which the teacher directs students' attention to matters subsequently capable of being described by students' making similar assertions. In method two, it is the students who make assertions about a work of art concerning its formal elements, emotional impact, and cultural implications; the teacher asks questions to stimulate and focus their assertions.

Each approach will be employed for an entire term, consisting of twenty lessons. Mean scores for males and females for each method and content will be compared. Analysis of variance will be the statistical procedure used for the 2x2x2x2 design.

College Freshmen Art Appreciation Classes
1200 Students, 160 Lessons

	Spring	Fall	Winter	Spring
Teacher A	Method 1 Content 1	Method 2 Content 1	Method 1 Content 2	Method 2 Content 2
Teacher B	Method 2 Content 2	Method 1 Content 2	Method 2 Content 1	Method 1 Content 1

Abstract - HOWARD CONANT

Title - Art for Schools

Objectives:

To study the ways by which the history of art might best be taught to elementary and secondary school pupils through the use of original art works. To determine if original art works representative of certain art schools and styles, certain modes of expression, certain artists, certain works, certain media, are particularly appropriate subjects of study for pupils at the elementary and secondary school levels of education. To determine if an emphasis upon an aesthetic-orientation in the elementary and secondary school study of original works of art, rather than an emphasis upon an historic, psychological, or sociological orientation, is a valid, and perhaps preferable, means of developing an understanding of the essential qualities of works of art.

To develop, implement, and evaluate various teaching practices in aesthetically-oriented teaching of art history to elementary and secondary school pupils; and to compare them with historically, psychologically and sociologically oriented art history teaching practices.

To locate, study, and to evaluate literature pertinent to the proposed study.

To determine if Albert Einstein's belief that children are capable of grasping the essence of advanced mathematical concepts is also applicable to the field of aesthetics.

To collect and interpret elementary and secondary school pupils' comments on works, artists, schools, movements, and periods studied.

To survey potential sources, and means of acquiring, cataloging, warehousing, distributing, displaying and making secure original art works, slides, reproductions, books, filmstrips, films, video tapes, and necessary projection equipment which should be acquired by public and private elementary and secondary schools, colleges and universities, professional art schools and adult education programs.

To study means by which the concluding phases of the Art For Schools project might best be financed and developed on community, state, regional, national and possibly international bases.

Abstract - EDMUND B. FELDMAN

Title - An Investigation into Techniques used by Professional Art Critics for Application to Art Instruction

Guiding Assumptions:

1. Art critics are engaged in the explication and evaluation of works of art for their particular publics and constituencies.
2. Art teachers must also explain works of art -- those of the masters as well as those created by students.
3. The critical procedures of professional critics may provide strategies which are useful in educational contexts.

Procedures:

1. Interviews with critics such as following: Rosenberg, Getlein, Genauer, Kuh, Kramer, Read, Tillim, Saarinen, et al.
2. Logical analysis of published critiques by above critics.
3. Classification of interview data and published material according to following categories of critical procedure: Description, Formal Analysis, Interpretation, Judgment or Evaluation.
4. Consultation with philosopher(s) of art criticism, such as Pepper, Weitz, Kaelin, et al.
5. Consultation with expert(s) on theory construction, such as Champlain, Foshay, Woodruff, Beittel.
6. Classification of material into major patterns of professional critical procedure.
7. Extrapolation from #6 for art instruction as follows:
    a. Description of main strategies in use by professional critics.
    b. Statement of adequacy of critical strategies in contexts of organized education.

Abstract - **LEON FRANKSTON**

Title - Effects of Structure, Content and Teaching Strategy upon the Quality of Art Products of Junior High School Pupils

Objectives:

It is hypothesized that art programs at the junior high school level are affected by three basic conditions which may not only be isolated and measured but which may also be interdependent and therefore requiring simultaneous inquiry and investigation.

The main objectives will be to determine the effects and inter-relationships of the following three independent variables:

1. The structure of the subject matter -- structured as opposed to non-structured.
2. The content of the subject matter -- depth content as opposed to breadth content.
3. The strategy of teaching art -- accepting as opposed to controlling strategy.

The three main effects and interactions will be measured on the basis of two series of art performance tests (pre and post tests) judged by experts on four dependent variables: (1) Original-Aesthetic Quality, (2) Technical-Realistic Proficiency, (3) Spontaneous Art Strategy, and (4) Divergent Art Strategy. Thus, in effect four slides will be undertaken -- one for each dependent variable.

Procedures:

1. Design of the study will consist of 2x2x2 analysis of variance. For each of the eight cells formed, four teachers will be selected in order to control the teacher variable.
2. Forty-eight junior high school art teachers will be identified on the basis of their teaching strategy (twenty-four as being accepting and twenty-four as being controlling).
3. Within each teaching strategy the teachers will be assigned at random to one of four seminars. Each seminar will train the teachers to develop proficiency in the art program assigned to them -- based on structure and content.
4. Following the seminars the teachers will put into practice their assigned art programs in their respective schools. They will each teach a regularly scheduled art class comprised of randomly selected eighth graders (for a period of six months).
5. The three independent variables (structure, content and strategy) will be verified through observations, interviews and questionnaires during the period of the experiment.
6. All pupils will be given three art tests at the beginning and at the end of the experiment to determine gain or loss with respect to the four dependent variables: Original-Aesthetic Quality, Technical-Realistic Proficency, Spontaneous Art Strategy and Divergent Art Strategy.
7. The art work will be judged and reliability will be tested by an analysis of variance for each dependent variable.
8. The main effects and interaction of the independent variables will be measured by an analysis of variance for pre-tests, post-tests and differences.
9. Photographic records of sample art products and class activities will be kept.
10. A final report will be prepared.

Abstract - **GUY HUBBARD**

Title - An Inquiry into Purposes in Art Education

Problem:

Statements of purpose in art education are usually revealed through curriculum outlines. Such statements are made by people who have a personal investment in art education and may not adequately represent art teaching needs and expectations. Professional purposes in education should be defined by the profession, but these definitions should be based on data drawn from all people associated with art instruction. These data have not been gathered much less synthesized into statements of purpose. Possession of such information may enable art teachers to improve their curricular predictions, take advantage of current attitudes, and eliminate shortcomings in their professional function, generally.

Procedure:

The problem may be attacked through three distinct steps.

Step I - For practical purposes, the information sources must be classified. The first class will consist of those written statements of purposes ranging from items of school law and state directives to local curricular policy statements. They will be studied on the assumption that they represent, or once represented, agreement about art education among policy makers. The second class of items will include information from individuals involved with the instructional functions of art education, namely, teachers and students. The third class will include information from people whose activities support the central educational purposes of art in schools but are not directly instructional. Administrators, counsellors, school architects, librarians, secretaries and janitors will be grouped here. The fourth class of people will include those lay individuals who function as interested citizens -- parents, philanthropists, members of local art associations and vendors of art supplies.

Step II - The sources for data will be drawn from a community of about 30,000. Data will be gathered through structured interview by trained personnel. Case studies may be made to draw out more detailed information. A core of items will be presented to all respondents to which will be added a supplementary series of items relating more directly to the classification into which an individual might fall.

These verbal data may not correspond with what people do or with what they actually think. We cannot check the validity of the data completely but classroom observation and skillful interviewing may help alleviate these potential discrepancies.

Step III - An analysis of the data collected might be expected to reveal central tendencies both among the groups and within them. This information may then be related to current practices in art teacher education, in-service training practices, and current research in art education. These conclusions need then to be disseminated throughout the profession. Art teachers must learn more about what is considered appropriate by all those concerned if they are to establish more effective teaching practices. In turn, they must use this knowledge to advance the objectives that are deemed most worthwhile by the profession and also those that are most practical.

Conclusion:

On the assumption that this study would reveal useful data, a follow-up might be undertaken to determine whether any improvement had occurred in the art program of the community. The study might also be replicated in a comparable location to test its reliability. The same study might also be extended to various kinds of community -- rural, slum or upper class -- in order to establish broader patterns of purpose to guide the art teaching profession as a whole.

Abstract - IVAN E. JOHNSON

Title - An Experiment Using Three Experimental Designs to Determine A Component Relationship That Will Increase the Range of Terminology Used in Discourse on Art

Three foci or components of the art education curriculum as identified by Barkan, Eisner and others are the production aspects of art, the critical aspects of art, and the historical aspects of art. Barkan reduces these aspects to two dimensions: Production-criticism and History-criticism. This dichotomous structure implies that in production (studio work) the pupil concomitantly learns to carry on a critical dialogue about his creative acts, his products and those of others, each in relation to one another. And in his gain of knowledge about the development of art (History-criticism) he develops competence in discourse and critical appraisal of art as it has illuminated the meaning of the past and its relation to contemporary life. Barkan does not speculate as to whether one component might be more dominant than the other.

In order to determine the effective ratio of Production-criticism to History-criticism for the student in gaining knowledge of art, it would be necessary to determine the outcome of learning using controlled variables. One of the outcomes of knowledge gain would be a facility in discourse about art as evidenced in use of vocabulary.

Problem:

To design and teach with three experimental curriculum designs with different ratios of production-criticism and history-criticism to determine the change in vocabulary used in discourse on art at the fourth grade level.

Objectives:

1. To determine which ratio of Production-criticism and History-criticism in a curriculum structure contributes to an increase in complexity of vocabulary used in discourse on art at the 4th grade level.
2. To ascertain implications the optimum ratio of the two curriculum components has for the teaching of art in the elementary school.

Procedures:

1. Three curricula structures will be designed with the following varying components: (A) Predominantly production-criticism and limited emphasis on history-criticism; (B) An equally balanced relationship of the two components; and (C) Predominantly history-criticism with limited production-criticism.
2. Four fourth grade classes as nearly equal as possible will be taught by the same teacher for a four month period. Three classes will be tested with the experimental curriculum; the remaining class will use the existing art curriculum.
3. Pre-tests of art vocabulary, writing samples, and tape recording of class discussions will be made before, at the mid-point, and at the conclusion of the experiment and vocabulary inventories will be made. Tape recordings of the class discussions will be made weekly and vocabulary complexity increases computed. Design and administer tests to determine knowledge gain as evidenced in the content of art.
4. Statistically analyze and compare the data acquired in the above steps with vocabulary inventories used in language at the fourth grade level.
5. Data will be examined by appropriate statistical means to determine which experimental curriculum contributes to an increase in vocabulary complexity.

Abstract - VINCENT LANIER

Title - Aesthetic Decision-Making in Adult Life Situations

Objectives:

1. To determine the reported importance of aesthetic criteria in life decisions made by the sample population over a specific time period.

2. To discover the aesthetic criteria alleged to have been used in these decision-making situations.

3. To measure differences in reported responses between art trained and non-art trained population

Procedure:

1. A panel of art education research and educational psychology specialists meeting for three days will select an adequately representative sample population of one-hundred adults (twenty-one years of age and older) including two groups: art trained and non-art trained.
2. The same panel will prepare an oral interview and/or written questionnaire designed to elicit responses revealing information relevant to the objectives of the study.
3. Each subject will be interviewed and the conversation tape recorded under conditions organized to be as similar as possible.
4. Responses will be tabulated, analyzed and treated statistically according to the recommendations of the panel.
5. Convene panel for evaluation meeting.
6. A final report will be prepared with particular emphasis on the implications suggested by the findings for art education.

Abstract - KENNETH LANSING

Title - The Development of a Curriculum in Art Education for the Elementary Schools

Objectives:

The six major objectives of this project are as follows:

1. To determine the nature and aims of instruction in painting in the elementary school.
2. To organize a sequential curriculum in painting for the six grades of the elementary school. This curriculum will be based on the nature and aims of instruction in painting, our knowledge of human growth and development, and our knowledge of the teaching-learning process.
3. To develop instructional materials and methods that will aid the implementation of the new curriculum and achieve the aims of painting instruction in five selected school districts in the State of Illinois.
4. To train cooperating art and classroom teachers to use the methods, materials, and curriculum that have been developed.
5. To achieve the aims listed above by making full use of the extension services of a State University.
6. To disseminate the findings of this study throughout the State of Illinois and throughout the nation by using the extension services of a State University.

Procedure:

A curriculum development team composed of the principal investigator and seven consultants will work at the University of Illinois over a four-year period to reach the stated objectives. The procedure that they will follow is conceived in terms of phases.

Phase I - Hold meetings with administrators, classroom teachers and art teachers in five cooperating school districts to explain the project. Record data on each participating classroom.

Phase II - (a) For a period of one year, the art teachers and classroom teachers from cooperating school systems will record the amount of painting in classes, what they teach, who does the teaching, problems in teaching painting. (b) The principal investigator and his consultants will formulate a statement of the nature and aims of instruction in painting, organize a sequential curriculum in painting.

Phase III - The first year, the principal investigator will analyze the recordings from the classrooms to determine the nature of the painting curriculum. This information will be presented to cooperating art teachers in a workshop at the University of Illinois for additions and clarifications. Teachers will examine the new curriculum for the purpose of making criticisms, alterations and refinements.

Phase IV - During the second year, the principal investigator and the consultants will compare the new painting curriculum with the one that exists in the schools being studied, determine the improvements that need to be made and develop teaching materials to make these improvements. These materials will be tested.

Phase V - The second year, the cooperating art specialists will be brought to the University of Illinois to study the new materials and to learn how to use them. They will practice with the materials by teaching the youngsters in a summer school.

Phase VI - The third year will be devoted to training the classroom teachers in the use of the methods, materials, and curriculum. The workshops will be directed by cooperating art teachers. Following the workshop, the teachers will try the methods, materials, and curriculum in their classes.

Phase VII - The third year, the principal investigator will attempt to solve any problems that may have developed as a result of the workshops and trials.

Phase VIII - The fourth year the curriculum will be used in the cooperating schools. The cooperating teachers will record the same kind of information recorded during the first year.

Phase IX - The fourth and part of the fifth year, the project will be evaluated.

Phase X - The fifth year, a system will be set up that will permit the making of continued improvements in the curriculum and the dissemination of curriculum materials.

Abstract - HILDA LEWIS

Title - Criteria for Evaluation of Children's Artistic Creativity

Objectives:

To develop and validate an instrument for the identification of artistic creativity in preadolescents by evaluating their art products for (a) aesthetic merit and (b) originality. The instrument is to consist of a series of descriptions of observable qualities of graphic and plastic art presented in a format that facilitates rating of each quality separately on a five point scale.

Procedures:

The development of the instrument will begin by searching the literature for authoritative statements about criteria of creativity in works of art. The statements will then be defined operationally, to function as a rating scale applicable to children's art work. The items will be submitted to teachers for evaluation in terms of usefulness and appropriateness in assessing artistic creativity in preadolescents. Suggestions for improving items will be solicited in interviews with these teachers. Items will be revised according to the evaluations and suggestions of teachers and submitted to a second group of teachers for furhter evaluation and suggestions, and revised accordingly. When the items appear to be satisfactory, they will be placed in a format that permits rating on a five-point scale.

After a period of practice to develop familiarity and skill in using the instrument, judges, drawn from art faculty in local colleges, will carry out independent ratings of children's art products. Ratings will be item analyzed and a reliability check conducted. Validity will be determined by comparing judgments obtained by using the scale with non-structured judgments of experts.

Abstract - JOHN A. MICHAEL

Title - Determining Concepts and Orientations Held Important by Practicing Artists Concerning their Work and Formulating Ways of Handling this Data Appropriate for the Field of Art Education

Problem:

This project seeks to determine concepts held important by artists concerning their work in the areas of painting (including drawing), sculpture, pottery, jewelry, weaving, and enameling and ways of handling such data that may be comprehensible and useful in the art learning situation at the secondary level.

Design of the Study:

1. The literature of the field (writings by art historians, art critics, and artists) will be reviewed noting concepts held important by artists as they work in each of the seven areas.

2. Interviews with a number of practicing artists in each area will be taped and studied. Parts of these interviews will be structured whereas other parts will be left unstructured. An effort will be made to procure the artist's operational approach and his "shop talk", as well as his critical evaluation of art work created by others. It is assumed that in and through such discussions points of view, knowledges, plans of action, orientations, and the like, may come about.

3. Information from the literature and from discussion with artists will be analyzed and categorized. The following are a few suggested possibilities for arranging of the data:

A. Categorizing according to
    a. description (dealing with perceptions)
    b. interpretation (dealing with meanings)
    c. evaluation (dealing with value judgments)
B. Categorizing according to levels of conception
    a. symbolic strategies developed within the verbal system
    b. verbal statements (descriptions)
    c. mental images
    d. basic perceptions (real objects)
C. Categorizing by pairing of ideas which seem to be counter or opposite of each other
    a. studio talk versus critical talk
    b. knowledge versus values and goals
    c. technical information versus operational constructs

Follow-Up-Study

Title - Determining the Effectiveness of Selected Concepts when Used in an Art Learning Situation at the Secondary Level

Phase I - Experimental applications with pilot studies wherein certain selected percepts and concepts are introduced into a self-reflective art learning situation will be conducted. There are many possibilities such as presenting percepts and concepts as clustered experiences which may result in the pupils arriving at certain generalizations which artists hold important. This situation may be contrasted or compared with situations where no concepts are introduced from the field of art by the teacher. Other possibilities would be those of comparing contradictory ideas in separate groups or within one group.

Phase II - From the experimental pilot studies of Phase I, a sense of direction will be derived which will be carried out in a larger experimental study based on the above findings.

Abstract - MARY J. ROUSE

Title - A Plan for the Establishment of an Art Education Research Information Center

Objectives:

This study proposes to survey empirical research studies in the field of art education and from other educational, psychological, and sociological journals in order to abstract, classify, and categorize materials which appear to have a relevance for further research and curriculum development in our field. These abstracts will be stored for retrieval and quarterly annotated bibliographies of new material will be dessiminated to interested art educators. Provisions will be made to enable these educators to receive copies of needed abstracts at minimum cost.

Significance of Study:

Practitioners in the field of art education decry the present poor state of communication concerning what has and is being done in empirical research. Only the larger universities have extensive collections of past and present journals, and few faculty members have time to inspect a variety of these in order to sift out pertinent studies. Public school personnel rarely are able to share in this primary information and are usually forced to rely on secondary interpretations. This project will attempt to provide quick access to the most current information as well as to pertinent studies from the past on any problem under study.

Procedures:

1. Research assistants at Indiana University, under the direction of the principal investigator, will collect abstracts of pertinent research from all suitable journals, utilizing for this purpose a standard analytical form which will list titles, authors, sources, objectives, results, conclusions and implications.

The determination of pertinency will be decided by checking details of each study against criteria assembled on the basis of recommendations made by a panel of expert art educators assembled for the purpose.

2. The studies will be classified under a system which will also be specified by the panel of experts cited above. This system might approximate one suggested by Burkhart, Bloom and Krathwohl, or one may be developed specifically for this project. A cross-referencing system will be utilized for more efficient and thorough retrieval.

3. The collection of abstracts will begin with the current year and proceed backwards. This will continue until all suitable journals have been surveyed back to 1930. Inadequate statistical procedures prior to this date suggest that earlier studies will not be suitable.

4. Provisions can also be made to record proposals accepted by the Office of Education and other foundations, and abstracts of the final reports as they appear.

5. Interested organizations will pay a minimal annual fee which will enable them to receive a quarterly annotated bibliography of current and past studies as they become available. This will be published in loose-leaf form to promote more efficient organization.

6. Provisions will be made to provide quick retrieval and copying of complete abstracts from the collection as called for, also at minimal charge. This will probably

require a computerized operation which Indiana University is prepared to offer. An extensive computer presently exists and was recently re-equipped with a Control Data Corporation 3600 system which should be adequate for our project.

Abstract - RONALD H. SILVERMAN

Title - Developing and Evaluating Art Curricula Specifically Designed for Disadvantaged Youth

The purpose of this study is to test the hypothesis that a specifically structured junior high school art program can affect changes in art abilities as well as several behavior patterns which may be facilitative in improving the school-success-potential for disadvantaged youth.

Procedures for testing this hypothesis will include: (1) selecting at random art teachers from junior high schools located in economically depressed areas of Los Angeles; (2) involving these teachers in a six week summer workshop wherein they will develop specific curricula to be utilized during the following school year; (3) administering criterion measures in a "pre-post" testing program to identify changes in abilities to organize space, uses of memory, knowledge of how culture influences behavior, one's articulation of self, attitudes toward school, uses of leisure, reading ability, and the quality of art learnings; and (4) analyzing data using appropriate multivariate procedures to match groups, and estimate changes in both behavior and in the relationships and interactions between and among dependent variables and experimental treatments.

Abstract - RALPH SMITH

Title - University of Illinois Environmental Planning Project for Secondary Grades 7-12

Objectives:

(1) To develop curriculum materials for the purpose of assisting in the teaching of one important aspect of environmental planning. The topical unit of instruction is to be called "The Aesthetic Dimension of Environmental Responsibility;" (2) To instruct a selected number of secondary teachers and students (grades 7-12) in an understanding of the central ideas, concepts, and principles of the project's topic; (3) to assess various levels of teachers' and students' mastery of topical content; (4) in general, to create the conditions within the required program of formal schooling for teachers and students to gain an appreciative and interpretive perspective on the aesthetic dimension of environmental responsibility.

Procedures:

An interdisciplinary environmental planning curriculum development team consisting of two principal investigators and at least four major consultants will work at the University of Illinois over a three-year period to accomplish a variety of tasks. The project's work will proceed through a number of phases.

Phase I - The first phase will be devoted to (1) analysis of the problems involved in providing instruction in the project area. The purpose of this analysis is to extend current discussions of environmental planning into the context of the philosophy of general education in the public schools, (2) the second part of the first phase will be devoted to a foundational analysis of the aesthetic, historical, societal, psychological, and technological aspects of environmental planning, that is, the aesthetic and extra-aesthetic dimensions of the topic. It is expected that the work of the first phase will result in a series of topics, or clusters of concepts and literature suitable for instructional purposes in the secondary grades.

Phase II - The second phase of the project will be devoted to the preparation of curriculum materials for the appreciative domain of art or aesthetic education. Since it is the project's work to design such materials, their character cannot be fully specified in advance. However, it is expected that master volumes and student booklets, aswell as significant visual aids will be prepared. A mobile visual exhibition of the project topic will be included as part of the unit, modeled perhaps on Edward Steichen's "The Family of Man." This traveling exhibit would be made available on a national basis and would serve the function of disseminating the project's work.

Phase III - The third phase of the project will be devoted to a training institute for invited secondary school teachers in the state of Illinois. The training institute will provide instruction in the purpose, the character, and the use of the project's materials.

Phase IV - The fourth phase will be devoted to the testing and assessment of project materials in the schools of training institute participants. Assessment will focus on the difficulties teachers experience in using materials in a variety of teaching situations and on students' levels of mastery of topical content.

Phase V - The final phase of the project will be devoted to extended efforts in dissemination including the instruction of others in the use of the new materials.

Abstract - WILLIAM STEWART

Title - A study of the Judgmental Process as Learning in the Visual Arts

Learning in the visual arts, as a judgmental process, could be considered autonomous and programmatic in nature. The ability of the individual to make aesthetic judgments necessary for learning depends upon how well he is able to emotionalize other psychic functions for the task. Within this structure of unique psychic behavior exists a potential tool of learning if we knew more about the judgmental process and could devise methods of improving receptivity and facilitating personally valid judgmental experiences.

I would like to further study aesthetic judgment as a learning process which demands of the subject certain abilities, sensibilities, values and experiences that allow him to be affectively occupied with objects.

The first part of the study would be an attempt to design a method of presenting a variety of controlled visual judgments. A non-discursive scale, linearly programmed, using paired comparisons of objects would be used. Such a scale would measure strength, direction and constancy of valid or invalid judgments of the paired objects presented. The data obtained from such a scale would be in the form of a visual record of psychic behavior and specific judgments. The degree of complexity or variation would further aid in providing a dimension of a population's visual judgmental profile. More discriminant pairs might be used to allow individuals to branch from a common linear scale to a personal one determined by his unique focus, psychic makeup or conceptual cues that might be introduced into the judgmental task.

Initially, an array of stimuli would be obtained by having selected objects judged by students and experts. The stimuli used for scaling would be those objects that would be valued by experts and not students, valued by students and not experts, and valued by students and experts alike.

This scale and other non-discursive measures would help the investigator to further describe certain dimensions of the judgmental process such as: (1) the psychic deportment of the learner in relation to the quality of his judgments; (2) the receptivity of the learner in a judgmental situation to various degrees of difficulty in judging; (3) the intuitive and noncognitive aspects of learning when judging works of art; (4) the characteristics of objects which facilitate judgment and learning.

Abstract - DAVID E. TEMPLETON

Title - An Investigation of the Process of Analogizing by Students of Art at the Secondary and Higher Education Levels

Problem:

One means of making abstract concepts verbally concrete in the art class is to employ figures of speech, the simile, metaphor and analogy. Curiously, however, it appears that while there are some students who are consistently triggered into action by a teacher's verbalizations which contain figures of speech there are also those who, with equal consistency reject such forms of communication. If such consistencies do exist, then this form of communication may not be a matter of verbal skill but rather involve an ability of analogizing, defined here as that process of noting and utilizing similarities among disparities. The purposes of this study will be to determine what patterns of analogical operation emerge when examining the relationships among the scores produced by students of art on six mental measures as well as ascertain the relationships between the ensuing patterns of those who operate analogically and their success or lack of success in the art class.

Objectives:

1. To identify some of the social, verbal and personality patterns which characterize analogizing and non-analogizing individuals.
2. To produce a tentative description of the analogizing personality.
3. To determine some of the relationships between social, verbal and personality patterns of analogizing and non-analogizing individuals and how they operate and succeed in the art class.

Procedures:

Termination of phase one, development of a sociometric device which will attempt to detect how the analogizer is perceived by his peers, will complete the analogizer-identification battery of three instruments. The first two instruments have already been developed. Phase two will entail administering of the analogizer-identification battery, tests of intelligence, achievement and creative thinking. Phase three will involve analysis of the data and phase four will encompass the documentation and writing of the report of the project.

Inasmuch as analogizing may involve a mental process in which an individual learns to draw upon a wider-than-usual range of sources of information for the solutions of problems, results of this investigation should make an important contribution to education. With education moving into the area of teaching primary forms and concepts, a fruitful avenue to investigate would be a mental operation which may be used in linking information both within and among diverse disciplines and basic structures.

Abstract - STANLEY G. WOLD

Title - Development of Measures of Perception of Directional Dynamics in Works of Art

Introduction:

The ability to respond to works of visual art might well be facilitated by the development and differentiation of certain modes of visual perception. The psychology of visual perception offers illuminating concepts for the understanding of art phenomena, but their relevance is not easily seen in specific situations. Koffka discussed the implications of Gestalt theory for art, and Werner believes that the physiognomic mode of perceiving is central in art. Comalli demonstrated that art students rely on physiognomic qualities to a greater extent than do science students, in judging rates of motion of pictures having directional dynamics. McFee, Kensler, Salome, and others did experimental and theoretical work relating perceptual psychology to art experience. Thus, a beginning has been made in defining and studying the role of perception in art experience. However, a detailed theoretical structure, developed from experimentation and useful for guiding practice in art education, remains to be achieved.

Problem:

The research to be proposed is seen as part of a larger effort directed to the following objectives:

a. To adopt from the psychology of perception, to discover, or to define categories of perceptual behavior relevant to the visual arts.
b. To develop revealing indices of these perceptual behaviors.
c. To trace the influence of these behaviors in teaching and learning in art.
d. To propose and test teaching approaches which facilitate appropriate perceptual learning.

Specific Project:

Studies of perception in art depend on successful development of the necessarily indirect indicators of the nature of the visual experience of a work of art. Dynamic qualities in drawings, paintings, and sculpture probably stem from a variety of characteristics of the work of art. At the least, line, itself, may suggest motion, and the area of a figure may be dynamic by virtue of its contour and orientation. The research proposed will attack the problem of developing measures of the perception of dynamic line and figural qualities. Initially, the rationale will be drawn from psychological concepts of physiognomic perception, field-independence-dependence, and visual gradients. The project will be directed to developing measures of the following types:

1. A test of awareness of idiosyncratic line qualities through requiring subjects to relate fragments of drawings to each other and to entire drawings.

2. A measure of awareness of dynamic qualities of line and figures through subjects' gestural responses to works of art. The goal is to obtain quantitative data from photographic records of gestures. The potential of this approach is suggested by the use artists and teachers make of gesture to reveal "what they see" and to direct attention to qualities which cannot be pointed to as physically present in the art object.

3. The instrument used by Comalli to demonstrate art students' reliance on a physiognomic mode of perception will be modified and developed to allow testing for a greater variety of behaviors.

FINAL CONFERENCE EVALUATION

Mr. Woodruff: The seminar has rather insistently, and in a variety of ways, put a finger on the problem of saying clearly what we mean when we talk about art education. This strand of our work reached a clear focus in the Tuesday panel with Lathrop, Champlin, and Foshay. They said in effect we must clear up the ambiguities before we start doing anything else that depends for its usefulness on precision of meaning, and validity of findings. That is, before we try experimental research we need to get down to a platform of clearly described phenomena, organize them into some kind of conceptual scheme that makes sense of them all, both among themselves and as a whole, and match them with a generally accepted vocabulary.

This could be construed as a disturbing message, and I think the panel members felt some concern about delievering it, because the conference is aimed at stimulating research. Nevertheless the panel members delivered an important message which deserves thoughtful consideration. I should like to make these supplementary comments within the overall or cumulative mood of all that has been said in nine strenuous days.

Experimental research is a precise operation on some limited phenomenon, which is explicitly identified in a way which makes it public property. There must be a known pre-experimental condition, an experimental treatment, a dependent variable that can be altered, and an alteration that can be measured.

Research has to be more or less atomistic. People often rebel against this notion, feeling that an empirically useful theory of behavior cannot be built on atomistic research, and especially on animal studies. The objective is not well founded. There is no global way to build a solid body of knowledge.

Anything more comprehensive than small, highly controlled studies becomes the assembly process rather than research, and takes on the nature of construct-making, or explaining, both of which are essentially theoretical. Theoretical thinking is a waste of time without valid data of the kind obtained from rigorous studies. Uncontrolled observation is too full of error to serve for this purpose.

Rigorous experimental research in art education is not possible until we have described art behavior rather precisely, and developed instruments to measure what has been described. Some of the most important research in any area is that which produces valid descriptions of a referent, or which develops a measuring instrument of some kind. In fact come fields practically owe their existence to the measuring instruments that made their description possible.

Areas of unclarity have been said to include the goals of art education, criteria for determining curriculum content, the nature of artistic behavior, and the educative process in the field of art.

This kind of talk by the panel should create no dismay, nor do I sense that it has done so. What has been said of art education is true of all education. On the other hand it deserves consideration, particularly at this point in your continuing work. There is a lot of subject matter detective work to do, to get a useful set of ideas hammered out.

Some of you have asked the logical next questions: Where would you start? What would you do? What criteria do we need for various aspects of the job? and others. If you will allow me to comment briefly on possible directions, I am willing to try for the second foot, on a purely suggestive and trial basis.

If I were involved in the job, I think I would try first to acquire a concept about behavior. It is needed as a basis for answering a variety of questions about art education. It is not necessary that everyone agree on one concept, but those who are going to work together should have one that will sustain and handle the questions that will arise as you engage in extended inquiry. Remember that any mental construct is a good one if it enables you to deal successfully with your life situations. For that purpose some criteria would be useful. What might they be? Here are three that deserve respect:

1. Compatibility between your concepts and any or all available data about behavior that are deserving of intellectual respect.

2. Capability of empirical testing.

3. Operational usefulness for curriculum development and teaching under the inescapable conditions inherent in our schools.

Now how might one acquire such a concept of behavior? Here is one possible way. Start backing up from the most immediate concern, to its essential footings, in some such order as this:

1. We want to improve art education. It consists primarily of a curriculum and the teaching of it to students whose behavior is to be changed in some way.

2. Teaching is regarded by many as essentially the facilitating of learning. (There are other concepts of it. You may prefer one of them. For example, the use of didactic discourse to provoke thought, or the maintenance of a provocative sensory milieu to be used by students as they wish, and so on.)

3. Learning has been empirically defined as a change inbehavior. If you choose to work on this notion, and it is a productive one, your point of focus has to be behavior. You are likely to conclude, (again as others have) that there is no such thing as learning per se. There is only behavior. Sometimes it changes when it is going on, but it never changes when it is not going on.

4. This leads one to ask what behavior is, and when it may be said to be going on. What does it look like? At this point it is mandatory to get below the level of organismic behavior, and become analytical. Therefore attention shifts to the identification of components such as perception, recall, review, organization, (which seem to be finer components of what we commonly call thinking), choosing, executing choices, getting feedback from executional actions, thinking about the feedback, altering choices, and so on. To deal meaningfully with these behaviors, we need some postulates to account for the behaviors themselves, and for the fact that they change over time and in relation to certain kinds of experiences.

Thus one might finally emerge with some kind of a notion of behavior. Then the search will turn toward a set of ideas about the special nature of artistic behavior within the more generic set of constructs. If so, questions such as the following can be asked to give direction to the effort.

What is art behavior? When one sees, what kinds of things does he see? Does he see differently from cases that are not art behavior? When one hears, what kinds of things does he hear? Does this differ for art experiences and non-art experiences? How do artistic seeing and hearing operate with reference to man-made art objects, and to natural objects that have or provoke esthetic qualities? How are these kinds of behavior acquired or enhanced? Does lots of seeing or hearing help? Are they helped by talking about what one is seeing or hearing?

When one sets out to make art, of what does the behavior consist? Is it the same when a person makes art to serve as a language, and when he makes art which has no language function but which serves as a stimulus object to evoke an esthetic reaction by its own properties?

What is creativity? How is it different from non-creativity? Is it an act in itself, or is it a quality of an act? If it is a quality, what are its primary dimensions? Does the quality, or any of its dimensions, vary from one act to another for the same person? Does it have identifiable correlates such as brightness, curiosity, certain kinds of sensitiveness, capacity for openness, and so on? Does it have any essential relationship to delinquency, disorder, confusion, being dirty, antisocial or immoral? How would good artists distribute over scales of social responsibility and such qualities? Does it vary by kinds of environment on such qualities as permissiveness, perceptual richness, or neatness and order? If some people are lacking in the correlates, can they nevertheless be taught to see? to hear? Can they learn to distinguish between levels of esthetic quality?

Is art behavior problem solving behavior? The term is very popular today, in what seems very much to be an effort to identify with the so-called higher mental processes. Some kinds of behavior that have been called problem solving in areas like mathematics and social studies, can be reduced to identification and procedure following. These processes don't sound very intellectual, but in fact they are, and they account for a vast amount of very important human behavior, examples of which abound in medical diagnosis, surgery, law, mathematics, statistics, and so on. The profundity of the problem-solving concept is likely to be invoked in cases where people are reacting on the basis of subliminal concepts, in situations where they simply do not know enough to make the possible identifications, and do not know the possible moves. In such cases hesitation and inquisitive probing can be superficially mistaken for problem solving behavior, when its best resolution is through more perception of the situation and ways of acting in it. Perhaps I have labored this idea too hard at this time, but it is a prime example of how a mythology about behavior leads to the overcomplication of education, and the neglect of fundamentals.

But now lets assume that all of this question asking and answering effort has yielded a set of concepts about artistic behavior. If one wants to look at his ideas, they can be drawn in the form of models and diagrams, which assist cross checking both within the constructs you have made, and between the constructs and a variety of instances of observed artistic behavior.

It isn't necessary to start from scratch here. Some promising conceptual schemes are already available in at least partially developed form, as for example operant conditioning with its related concept of behavioral objectives, and conceptual theory with its related concept of mediating variables. You will probably need both of them, and perhaps something more before you get through. How do you use such a set of concepts? Don't try to use them just as general theoretical positions. Theory has no direct relationship to practice. The concepts have to be made yours in a personal sense by going through the discovery process yourselves. Your ideas about behavior have to play such a pervasive role in your research and curriculum development that they must reach the stage of familiarity in considerable detail. I am aware that I am suggesting that you be pretty fair scholars in this area, and I believe it is necessary. Since all of us deal essentially with human behavior by different media, we are all by necessity students of behavior as much as of our content fields. So it is a fundamental point of beginning.

Obviously a comparable line of inquiry is appropriate with reference to goals, curriculum content, and teaching processes, but all of them will be much more manageable when one starts with a set of good ideas about behavior.

What does all this mean for an evaluation of the seminar?

1. It has been pointed at the generating of research. It is obviously doing this.

2. It has made clear the fact that the job of curriculum development is larger and longer than most of at first believe.

3. It has helped us see that certain conditions should be satisfied before we get into experimental research, and that those conditions can be promoted by extensive descriptive research.

4. It has introduced us to a dialogue about the nature of art education which has pushed us deep into the descriptive job, and given us several useful ideas about how to continue it.

5. Several of you have already spoken of the possibility of continuing the job in smaller groups, with communication between groups, and with follow-up conferences.

6. Finally, it has demonstrated its potency by keeping everyone active in spite of fatigue after nine days of intensive work.

I hope the U. S. Office of Education gets as much for its money everywhere else as it has obtained here.

Mr. Hoffa: In the first place I think any evaluation of the conference, in terms of the Office, must depend upon the purposes of the program under which this conference was funded. This conference was funded under the aspect of the Cooperative Research Program called Development Activities. I'm not sure exactly how this came about but I suspect that there was an informal communication back and forth between members of the office and members of the planning committee which eventually resulted in an invitation to submit a proposal. This is the major difference. The other distinction is that Developmental Activities have as their primary purpose that of seeding further research. This fact that the monies which were invested in this conference, it is going to be impossible to really evaluate them. One of the reasons that I feel that the job of evaluation from the Office point of view is so impossible, at this point, is that it is not really going to be possible to evaluate the Office reaction toward the conference until the germination takes place. The seed has been sown. As to whether it takes root, as to what crop will finally emerge, is really going to be the test of the conference, consequently it is not a matter of making a judgment on the basis of nine days of discussion, it cannot be a matter of making a judgment on the basis of a final report, the final judgment of the worth of the investment of public funds in a conference such as this is going to depend upon the extent to which further research, further inquiry, whether along the lines of pure research or along the line of intellectual inquiry or along the lines of experimental programs on the highest or the most mundane levels are provoked by it. That is the basis for the final evaluation. I don't think this will be possible for at least three years and probably five years. So, in this sense, any evaluation of the conference at this point is literally impossible. From my own point of view, however, I am firmly convinced that this conference represents a real milestone in the profession and, in fact, I think it represents a milestone in the various other arts professions, as well. There have been comparable conferences, not necessarily similar ones, but comparable ones in music and in theater. I share Dr. Woodruff's enthusiasm for the energy, the drive, the commitment of every individual who is here. Your efforts along these lines. I think that the promise of a many-fold increase in research activity and also in research quality is almost certain to be fulfilled. I think that the interchange of views between art educators and those in tangential disciplines has proved, as it did in our previous art education conferences, to be valuable, and I think it is particularly valuable here where the role of the outside consultants was that of actually serving as consultants rather than provocateurs. I think that one of the reasons for this, of course, is the charges that were given to these consultants. I think the fact that the tenor of the conference and the central theme of the conference remained in the hands of art educators, there is good promise for the actual implementation of the recommendations of these consultants. Their recommendations were literally knit into the fabric of the conference and were not applied to the outside as either a dose of ant poison or frosting, depending upon your point of view. I also think I would again commend the enormous amount of homework on the part of all participants -- the quality of the papers was unmatched in my experience. I would like to have seen two groups represented which were not represented. In the first place, the personnel, the participating personnel in the conference, were composed almost entirely of college and university people. Now in terms of research and, perhaps to a lesser extent, in the terms of curriculum development, this is the growing edge of the profession. Still, however, I think that there are people in public education, elementary and secondary education and supervisory positions, who could have served a very real function, not necessarily in terms of the immediate contributions to this group, but in terms of their dissemination and implementation of some of the recommendations of the group; and the other representation which I would have liked to have seen -- is that in spite of our relatively brief history there are several people in the profession who are interested in the history of art education. I would have liked to have seen one of these people here simply to represent the interest of those persons who are interested in historical research in their profession. I would like to add is that if Mr. Dorn's figures are right, this group represents about .2 of one per cent of the profession. There remain outside of these walls something like 99.8 per cent of the profession whom we have to influence, who have to be brought under the cover of the richness and the provacative nature of the interchange which has taken place here. This, I think, is the real challenge which faces us now. This is certainly not the end of the beginning -- it is at best the beginning of the beginning. Frankly, I can forsee only one difficulty when I return to Washington and that's the task of convincing others in the Office that the conference has been as good as I think it has been.

Mr. Dorn: I am proud of this conference as a reinforcement to the posture and stance of the profession. I think sometimes in my position I am too subject to seeing some of the weaknesses of what we are like as human beings and what we lack in terms of growing as a profession. This meeting provides a nucleus of a leadership for change, or transition. The direction is here -- it's not solid unanimity as to where we are going but a commitment of a posture and a way of acting to this. I think, too, we have a sense of direction out of this conference. One of the really comforting things most of us have experienced in the last few years in our professional organizations is this new effort toward seeking goals -- in attacking goals. Another thing that has come out of this is the confirmation of the reciprocal value we have had in the interaction of art educators with those of other disciplines. I think it has given us the conviction that we can talk to others outside of our field, that we don't need to imitate them as models but that we can work with them. Another thing is the sense of urgency -- the need for, reform or change and the need for a broad attack on the problem at both the theoretical and practical levels. This came out very clearly in the kinds of research proposals you have examined the last few days. I would add some cautions many of which have already been examined. In a sense you have been stimulated, enlightened and excited about many things and yet you go back to a world today or tomorrow that is basically unchanged as a result of your experience. We are enthused and we go back and yet we find that things are much the same. This gets us to the point as to how can we get these views, the things we have discovered, to effecting the others who need to be effected. The job then becomes one of your willingness to go back and to take this and to develop other activities which will, in turn, effect many, many people. How can you best implement the things you have talked about for the profession? Another caution is that while the climate is promising, more promising than it has ever been for the support by the Federal Government of support the arts in education, that probably in the last analysis only a very small percentage of the studies, experiments and demonstrations needed to truly effect change in art in U. S. schools will actually be funded. Although the money is large we are going to have to locate other sources. We cannot continue to depend entirely on the Federal Government, for support of our research. We have an obligation to go to foundations, to industry, to philanthropy, to our schools and our professional groups for additional support for the kind of things we do. We must ask more and utilize our professional associations to do some of the kinds of things we have said we want to do here. There are several ways this can be done. One, as a source of funds, to support needed research. Second, I think professional associations have to be used more fully as a source of information dissemination. We have to be able to increase the quantity, quality and type of conferences. I think we need to look at associations as clearing houses for establishing priorities in the jobs to be done. We can use our associations for defining the goals of art education in U. S. schools and for establishing the standards for the profession -- two areas we still have not defined. We can act as agencies for facilitating studies which cross school, state and regional boundaries.

SUMMARY STATEMENT

Mr. Mattil: This report, in a way, needs no ending. It began as an invitation to open the whole field of art education for critical examination and re-evaluation with the hope that some promising research and curriculum development directions would be forthcoming. It was never the intent of the planners of this meeting to champion particular viewpoints or to damage others. Rather, the seminar planned to entertain as many useful ideas as possible, in a limited period of time, and see if some inroads might be made into major problem areas. The highest expectation was the possibility of immediately generating research and curriculum proposals aimed at the study of or solution of some major concerns.

The papers of this seminar have attempted to answer the charges presented by the planners. Villemain elaborated on basic relationships between art education and philosophic inquiry while Ecker has called attention to a need for qualitative research in art education. Taylor reexamined the status of the history of art and "art appreciation " and the conditions surrounding the teaching of these. He clearly analyzed the problems and suggested new directions for consideration. Rosenberg posed fresh and direct approaches to the understanding of contemporary art and his paper provided a source for renewed development in the philosophy of art education. Kaprow provided the insights of the artist and opened new possibilities through the direct confrontation of art and artists as mediators of aesthetic education.

Mr. Hausman broadly examined the content of art education, raised questions regarding its components and suggested the need for change. Mr. Tumin developed some theoretical relationships between research in teacher education and the social sciences. McFee concerned herself with the sociological implications for art education. Harris provided a carefully conceived and highly objective survey of learning theory. Beittel demonstrated the application of empirical research procedures to the problems of learning and the artistic process. Eisner broadly examined the theoretical and practical concerns of curriculum development, while Barkan examined newer concepts, providing positive directions for further consideration.

Champlin broadly examined philosophical research methodology and its meanings. Lathrop considered the empirical road to research in art education and suggested technical conditions for research. Foshay surveyed innovation in education and pointed out directions for consideration in curriculum development and research in art education.

Mr. Woodruff, the conference evaluator, offered a precise assessment of the material of the conference and added a well considered analysis of curriculum development needs.

The panels and the small group discussions have clearly demonstrated the usefulness of working together. Each day brought the participants closer to some common understandings, but each day also point out the need for greater precision in language, definition of concepts, and the inconsistencies in the stated goals of art education.

The need to come to some general agreement on goals of art education is apparent. Much more must be done in considering the content of art education. Artistic behavior needs careful study and description. Woodruff, Tumin, Lathrop, Champlin and Foshay point out a multitude of other conditions that must be confronted to establish the broad research base for art education.

Even with all the admitted weaknesses, the quality of the proposals of this seminar and the evidence of accomplished research demonstrated that art education is "on the way" in research and curriculum development. Two of the projects considered here give a strong indication of the usefulness of this type of seminar. The first project is a proposal for a Research and Development Center for Aesthetic Education. This center has since been proposed as a consortium of major universities. A second project, An Institute for Research Training in Art Education, has been proposed by Robert Burkhart in cooperation with the National Art Education Association.

Many of the projects initiated as a result of the invitation to this seminar have been fully developed and have been submitted for consideration to funding agencies.

There have been frequent requests for copies of the plan of this seminar from other fields of study. This meeting has demonstrated a method of a massive assault on the problem of research but the effect of this seminar can hardly be evaluated in 1966. A period of five to ten years will be needed to determine the extent of its impact on art education. This meeting was, indeed, only a commencement.

SOME DISSEMINATION ACTIVITIES

1. A small grant proposal was prepared and forwarded to the U.S.O.E. for the purpose of dissemination activities related to this seminar. These activities include making kinescopes of a ninety-minute panel of the interaction panel of eight of the specialists and making taped copies of all of the major talks and panels. This would make the results of the seminar widely available to the profession. To date, no action has been taken on this proposal.

2. The seminar will be the topic of a three-hour panel discussion at the Western Arts Association meeting in Houston, April 2, 1966, with various participants of the seminar serving as panelists.

3. Funds have been obtained from the Lowenfeld Fund of the N.A.E.A. to print an additional one-thousand copies of the final report. Extensive efforts were made to obtain sufficient funds for a larger printing as the demand for this report is expected to be especially large. Already requests for large quantities have been received.

4. Copies of the final report will be sent to all participants and observers.

5. Approximately one-hundred copies of the final report will be sent to art department libraries in colleges and universities across the nation.

6. Any portion of the materials of this seminar will be made available on request for publication purposes.

7. A portion of the video-taped panel appeared on "Project Teacher" on WPSX TV in January, 1966.

8. Brief reports of the seminar have appeared in School Arts, Art Education, and the P.A.E.A. Newsletter.

BIBLIOGRAPHY SUGGESTED BY PARTICIPANTS

Albert, Calvin - Figure Drawing Comes to Life, New York; Reinhold Pub. Corp., 1957.
Anderson, Richard C., and Ausubel, David P. - Readings in the Psychology of Cognition, New York; Holt, Rinehart & Winston, 1965.
Andrews, Michael F., (ed.) - Aesthetic Form and Education, Syracuse; Syracuse University Press, 1958.
Arnheim, Rudolf - Art and Visual Perception, Berkeley; University of California Press, 1954.
Association for Supervision & Curriculum Development - Research for Curriculum Improvement, ASCD Yearbook, 1957.
Baldinger, Wallace S. - The Visual Arts, New York; Holt, Rinehart & Winston, 1960.
Ball, Victoria - The Art of Interior Design, New York; McMillan, 1960.
Barkan, Manuel - Through Art to Creativity, Boston: Allyn & Bacon, Inc., 1960.
Barr, Alfred H., (ed.) - Masters of Modern Art, New York; Museum of Modern Art; Simon and Schuster, 1954.
Barron, Frank X., Creativity and Psychological Health, Princeton, N.J; Van Nostrand, 1963.
Barzun, Jacques - Teacher in America, Boston; Little, Brown & Co., 1945.
Baudelaire, Charles P. - The Mirror of Art, Garden City, N.Y.; Doubleday, 1956.
Bell, Clive - Art, New York; Capricorn Books, 1958.
Berelson, Bernard, (ed.) - The Behavioral Science Today, New York; Basic Books, 1963.
Bigge, Morris L., Learning Theories for Teachers, New York; Harper & Row, 1964.
Bloom, B., Davis, A., Hess, R. - Compensatory Education for Cultural Deprivation, New York; Holt, Rinehart & Winston, 1965.
Boas, George - A Primer for Critics, Baltimore; The John Hopkins Press, 1937.
Bowie, Henry P. - On the Laws of Japanese Painting, New York; Dover Publications, 1951.
Brim, Orville G., Sociology and the Field of Education, New York; Russell State Foundation, 1958.
Bruner, Jerome S. - "Going Beyond the Information Given," Contemporary Approaches to Cognition, Cambridge; Harvard University Press, 1957.
_______________, On Knowing, Harvard University Press, 1963.
_______________, The Process of Education, Cambridge; Harvard University Press, 1960.
_______________, A Study of Thinking, New York; Wiley, 1956.
Buchler, Justus, The Concept of Method, New York; Columbia University Press, 1961.
Camus, Albert, The Rebel, New York; Knopf, 1961.
Chandler, B.J., et al, Education in Urban Society, New York; Dodd, Mead, 1962.
Christensen, Erwin, O., Primitive Art, New York, Crowell, 1955.
Cassirer, Ernst, An Essay on Man, New Haven; Yale University Press, London, H. Milford, Oxford University Press, 1944.
Cataldo, John W., Lettering, Worcester, Mass., Davis Publications, 1958
Clark, Sir Kenneth M., Looking at Pictures, New York; Holt, Rinehart & Winston, 1960.
Conant, Howard, Art Education, Washington; Center for Applied Research in Education, 1964.
Conant, Howard & Randall, Arne, Art in Education, Peoria, Ill., C.A. Bennett, 1959.
Conant, James B., Slums and Suburbs, New York; McGraw-Hill, 1961.
Beittel, Kenneth R., "Curriculum Experimentation in Art Education as Seen Through Recent Research," Modern Viewpoints in the Curriculum, New York; McGraw-Hill, 1964.
Broudy, Harry S., Building a Philosophy of Education, 2nd ed., Englewood Cliffs, N.J.; Prentice-Hall, 1962, c1961.
_______________, Democracy and Excellence in American Education; a Study in Curriculum Theory, Chicago; Rand McNally, 1965, c1964.
D'Amico, Victor E., Creative Teaching in Art, Scranton, Pa.; International Textbook, 1942.
Dember, William N., The Psychology of Perception, New York; Holt, 1960.
Davis, Allison, Social-Class Influences Upon Learning, Cambridge, Harvard University Press, 1962 c1948.
DeFrancesco, Italo L., Art Education; Its Means and Ends, New York; Harper, 1958
Dember, William Norton, The Psychology of Perception, New York; Holt, 1960.
Dewey, John, Art as Experience, New York; Capricorn Books, 1958.
____________, Democracy and Education, New York; The MacMillan Co., 1916.
____________, "Qualitative Thought," Philosophy and Civilization, N.Y., Minton Balch, 1931.

Dreyfuss, Henry, Designing for People; New York, Simon & Schuster, 1955.

Dudley, Louise & Faricy, Austin, The Humanities; Applied Aesthetics; 3rd ed., New York and London, McGraw Hill, 1960.

Edman, Irwin, Arts and the Man; New York, W.W. Norton & Co., 1939.

Eisenstein, Sergei M., Film Form; New York, Harcourt, Brace, 1949.

__________, The Film Sense; New York, Harcourt, Brace & Co., 1942.

Focillon, Henri, The Life of Forms in Art; New Haven, Yale University Press; London, H. Milford, Oxford University Press, 1942.

Fry, Roger E., Transformations; London, Chatto & Windus, 1926.

__________, Vision and Design; New York, Penguin Books, 1940.

Gage, Nathaniel L. (ed.), Handbook of Research on Teaching; Chicago, Rand McNally, 1963.

Gagne, Robert M., The Conditions of Learning; New York, Holt, Rinehart & Winston, 1965.

Gaitskell, Charles D., Art Education During Adolescence; Toronto, Ryerson Press

__________, Art Education in the Kindergarten; Peoria, Ill., C.A. Bennett, 1952.

__________, Art Education for Slow Learners; Peoria, Ill., C.A. Bennett, 1953.

__________, Children and Their Art; New York, Harcourt, Brace, 1958.

Gardner, Helen, Art Through the Ages, 3rd ed.; New York, Harcourt, Brace, 1948.

Gendlin, Eugene T., Experiencing and the Creation of Meaning; New York, Free Press of Glencoe, 1962.

Getzels, Jacob W., et al, Creativity and Intelligence; Explorations with Gifted Students; London, New York, Wiley, 1962.

Ghiselin, Brewster (ed.), The Creative Process; A symposium; New York, New American Library, 1955.

Giedion, Sigfried, Architecture, You and Me; Cambridge, Harvard University Press, 1958.

__________, Contemporary Sculpture: An Evolution in Volume and Space; New York, G. Wittenborn, 1955.

__________, Space, Time and Architecture; Cambridge, Harvard University Press, 1949.

Gilson, Etienne H., Painting and Reality; New York, Pantheon Books, 1957.

Goldwater, Robert, et al, Artistson Art; New York, Pantheon Books, 1945.

Gombrich, Ernest H.J., Art and Illusion; New York, Pantheon Books, 1960.

__________, The Story of Art; London, Phaidon Press, New York, Graphic Society, 1962.

Goodman, Percivil & Paul, Communitas; New York, Vintage Press, 1960.

Gordon, Milton M., Assimilation in American Life; New York, Oxford University Press, 1964.

Gordon, William J.J., Synectics, the Development of Creative Capacity; New York, Harper, 1961.

Greenberg, Clement, Art and Culture; Boston, Beacon Press, 1961.

Greene, Theodore M., The Arts and the Art of Criticism; Princeton University Press, 1940.

Gropius, Walter, The Bauhaus; New York, The Museum of Modern Art, 1938.

__________, The New Architecture and the Bauhaus; London, Faber & Faber, 1965.

Grousset, Rene, The Civilizations of the East; New York, London, A.A. Knopf, 1931.

Gruber, et al, Contemporary Approaches to Creative Thinking; New York, Atherton Press, 1962.

Gruber, Howard E., Contemporary Approaches to Creative Thinking; New York, Atherton, 1962.

Haftmann, Werner, Painting in the Twentieth Century; New York, Praeger, 1960.

Harris, Dale B., Children's Drawings as Measures of Intellectual Maturity; New York, Harcourt, Brace & World, 1963.

Hausman, Jerome, (ed.), Commission Report on Art Education; The National Art Education Association, Washington, D.C., 1964.

Hastie, W. Reid (ed.), Art Education; Chicago, NSSE; University of Chicago Press, 1965.

__________, National Society for the Study of Education, Yearbook Vol. 64, Part II, Art Education; Chicago, University of Chicago Press, 1965.

Hauser, Arnold, The Social History of Art; New York, Knopf, 1951.

Havighurst, Robert J., et al, Society and Education, 2nd ed.; Boston, Allyn & Bacon, 1962.

Heller, Jules, Printmaking Today; New York, Holt, 1958.

Hess, Thomas B., Abstract Painting; Background and American Phase; New York, Viking Press, 1951.

Highet, Gilbert, The Art of Teaching; New York, Knopf, 1950.

Hilbersimer, Ludwig, The Nature of Cities; Chicago, P. Theobald, 1955.

__________, The New Regional Pattern; Chicago, P. Theobald, 1949.

Hilgard, E.R., Theories of Learning and Instruction; 63rd Yearbook of NSSE, Chicago, University of Chicago Press, 1964.

Hoffman, Martin L. (ed.), Review of Child Development Research; New York, Russel Sage Foundation, 1964.

Ivins, William M., How Prints Look; New York, 1943.

Janson, Horst W., History of Art; Englewood Cliffs, N.J., Prentice-Hall, 1963.

Kaelin, Eugene F., An Existentialist Aesthetic; Madison, University of Wisconsin, 1962.

Kauffman, Edgar, Jr., What is Modern Design?; New York, Museum of Modern Art, 1950.

Keising, Felix M., Cultural Anthropology; the Science of Custom; New York, Holt, Rinehart and Winston, 1962 c1958.

Kepes, Gyorgy (ed.), The Nature and Art of Motion; New York, G. Braziller, 1965.

__________________, Education of Vision; New York, G. Braziller, 1965.

__________________, Structure in Art and in Science; New York, G. Braziller, 1965.

__________________, Language of Vision; Chicago, P. Theobold, 1944.

Kimball, Salon & McClellan, James, Education and the New America; New York, Random House, 1962.

Kluckholn, Florence, Strodtbeck, F.L., Variations in Value Orientations; Evanston, Illinois, Row, Peterson, 1961.

Krech, David, et al, Individual in Society; New York, McGraw-Hill, 1962.

Kuh, Katharine, The Artist's Voice; New York, Harper & Row, 1962.

Langer, Susanne K., Reflections on Art; Baltimore, Johns Hopkins Press, 1958.

_________________, Feeling and Form; New York, Scribner, 1953.

_________________, Philosophy in a New Key; Cambridge, Harvard University Press, 1957.

_________________, Problems of Art; New York, Scribner, 1957.

Larkin, Oliver W., Art and Life in America; New York, Holt, Rinehart & Winston, 1964.

Larrabee, Harold A., Reliable Knowledge; Boston, New York, Houghton Mifflin Co., 1945.

Lindstrom, Miriam, Children's Art; Berkeley, University of California Press, 1960.

Logan, Frederick M., Growth of Art in American Schools; New York, Harper & Row, 1955.

Lowenfeld, Viktor, et al, Creative & Mental Growth; New York, MacMillan Co., 1965.

________________, Creative and Mental Growth; New York, MacMillan Co., 1952.

Lynd, Robert S., Knowledge for What?; Princeton, Princeton University Press, 1939.

Lynes, Russel, The Tastemakers, 1st ed.; New York, Harper, 1954.

Malraux, Andre, The Voices of Silence; Garden City N.Y., Doubleday, 1953.

Maritain, Jacques, Creative Intuition in Art and Poetry; Cleveland, World Pub. Co., 1955.

Mattil, Edward L., Meaning in Crafts; Englewood Cliffs, N.J., Prentice-Hall, 1965.

Mayer, Ralph, The Artist's Handbook of Materials and Techniques; Rev. Ed., N.Y., Viking Press, 1957.

McFee, June K., "Art for the Economically and Socially Deprived," 64th Yearbook, National Society for the Study of Education, Part II, Chicago, University of Chicago Press, 1965.

______________, Preparation for Art; SanFrancisco, Wadsworth Publishing, 1961.

McCurdy, Charles (ed.), Modern Art, a Pictorial Anthology; New York, MacMillan, 1958.

Mead, Margaret, The School in American Culture; Cambridge, Harvard Univ. Press, 1951

Motherwell, Robert (ed.), The Data Painters and Poets; N.Y., Wittenborn, Schultz, 1951.

Mumford, Lewis, Roots of Contemporary American Architecutre; New York, Reinhold, 1952.

______________, From the Ground Up; New York, Harcourt, Brace, 1956.

______________, The City in History; New York, Harcourt, Brace, 1961.

Munro, Thomas, Art in American Life and Education; 40th Yearbook NSSE, Chicago, University of Chicago Press, 1941.

_____________, Evolution in the Arts; Cleveland, Cleveland Museum of Art, 1963.

_____________, Toward Science in Aesthetics; New York, Liberal Arts Press, 1956.

_____________, Munro, Thomas, "The Interrelation of the Arts in Secondary Education," The Creative Arts in American Education; Cambridge, Harvard University Press, 1960.

_____________, Art Education, its Philosophy and Psychology; New York, Liberal Arts Press, 1956.

Nadeau, Maurice, The History of Surrealism; Translated from the French by Richard Howard, New York, MacMillan, 1965.

Nagel, Ernest, "Philosophy in Educational Research," First Annual Phi Delta Kappa Symposium on Educational Research; Bloomington, Indiana, Phi Delta Kappa, Inc, 1960.

National Art Education Association, Studies in Art Education; Washington, 1959.

Nicolaides, Kimon, The Natural Way to Draw; Boston, Houghton Mifflin Co., 1941.

Ortega Y. Gasset, Jose, The Dehumanization of Art; Garden City, N.Y., Doubleday, 1956.

Panofsky, Erwin, Meaning in the Visual Arts; 1st ed., Garden City, N.Y., Doubleday, 1955.

Parnes, Sidney J, et al, A Source Book for Creative Thinking; New York, Scribner, 1962.

Passow, Harry A., (ed.), Education in Depressed Areas; New York, Bureau of Publications, Teachers College, Columbia University, 1963.

Peck, Stephen R., Atlas of Human Anatomy for the Artist; New York, Oxford University Press, 1951.

Pepper, Stephen C., The Basis of Criticism in the Arts; Cambridge, Harvard Univ Press, 1945.

Peterdi, Gabor, Printmaking: Methods, Old and New; New York, MacMillan, 1959.

Pevsner, Nikolaus, An Outline of European Architecture; Baltimore, Penguin Books, 1960.

Phenix, Philip H., Philosophy of Education; New York, Holt, Rinehart & Winston, 1960.

________________, Realms of Meaning; a Philosophy of the Curriculum of General Education; New York, McGraw-Hill, 1964.

Piaget, Jean, The Child's Conception of the World; New York, Harcourt, Brace, 1929.

____________, The Child's Concept of Space; London, Routledge & Paul, 1956.

____________, The Growth of Logical Thinking from Childhood to Adolescense, N.Y., Basic Books, 1958.

____________, The Child's Conception of Physical Causality; New York, Harcourt, Brace; London, K. Paul, Trench, Trubner & Co., 1930.

____________, Judgment and Reasoning in the Child; London, K.Paul, Trench, Trubner & Co.; New York, Harcourt, Brace, 1928.

____________, The Language and Thought of the Child; New York, Humanities Press, 1959.

Pollack, Peter, The Picture History of Photography; New York, Abrams, 1958.

Rader, Melvin M., (ed.), A Modern Book of Esthetics; an Anthology,3rd ed., New York, Holt, Rinehart, and Winston, 1960.

______________________, A Modern Book of Esthetics; New York, Holt & Co., 1935.

Randall, Herman J. Jr., "Qualities, Qualification, and the Aesthetic Transaction," Nature and Historical Experience; New York & London, Columbia University Press, 1958.

Read, Sir Herbert E., A Concise History of Modern Painting; N.Y., Praeger, 1959.

_____________________, "The Creative Realm of Education," The Creative Arts in American Education; Cambridge, Harvard University Press, 1960.

_____________________, The Meaning of Art; London, Faber & Faber Ltd., 1936.

_____________________, The Philosophy of Modern Art; New York, Horizon Press, 1953.

_____________________, The Grass Roots of Art; New York, G.Wittenborn, 1955.

_____________________, The Forms of Things Unknown; Essays Towards an Aesthetic Philosophy; New York, Horizon Press, 1960.

_____________________, Education Through Art, 3rd rev. ed.; N.Y., Pantheon Books, 1956.

Rokeach, Milton, The Open and Closed Mind; New York, Basic Books, 1960.

Reed, Carl, Early Adolescent Art Education; Peoria, Ill., C.A. Bennett Co., 1957.

Rewald, John, The History of Impressionism; New York, The Museum of Modern Art, 1946.

__________, Post-Impressionism; New York, Museum of Modern Art, Doubleday, 1962.

Richards, James M., An Introduction to Modern Architecture; New York, Penguin, 1947.

Riessman, Frank, The Culturally Deprived Child; New York, Harper & Row, 1962.

Rosenberg, Harold, The Tradition of the New; New York, Horizon Press, 1959.

________________, The Anxious Object; Art Today and its Audience; N.Y., Horizons, 1964.

________________, Arshile Gorky; The Man, the Time, the Idea; N.Y., Horizon, c1962.

Rosenberg, et al, Mass Culture; the Popular Arts in America; Glencoe, Ill, Free Press, 1957.

Sachs, Paul J., Modern Prints and Drawings; New York, Knopf, 1954.

Schinneller, James, Art; Search and Self-Discovery; International Textbook Co., 1961.

Schreiber, Daniel (ed.), The School Dropout; Washington, National Education Assoc., 1964.

Scott, Robert G., Design Fundamentals; New York, McGraw-Hill, 1951.

Shahn, Ben, The Shape of Content; Cambridge, Harvard University Press, 1957.

Solley, Charles M. et al, Development of the Perceptual World; N.Y., Basic Books, 1960.

Struppeck, Jules, The Creation of Sculpture; New York, Holt, 1952.

Sypher, Wylie (ed.), Art History, an Anthology of Modern Criticism; N.Y., Vintage, 1963.

Taylor, Calvin W. (ed.), Creativity: Progress and Potential; New York, McGraw-Hill, 1964.

Torrance, Ellis P., Guiding Creative Talent; Englewood Cliffs, N.J., Prentice-Hall, 1962.

________________, Rewarding Creative Behavior; Prentice-Hall, 1965.

________________, Guiding Creative Talent; Minneapolis, University Of Minnesota Press, 1962.

________________, Education and the Creative Potential; Minneapolis, University of Minnesota Press, 1964.

Thelan, Herbert A., Dynamics of Groups at Work; Chicago, University of Chicago Press, 1954.

Thibaut, John W., et al, The Social Psychology of Groups; New York, Wiley, 1959.

Trier, Eduard, Form and Space; New York, Praeger, 1962.

Venturi, Lionello, A History of Art Criticism; New York, E.P. Dutton & Co, 1936.

Villemain, Francis T., "Methodological Inquiry into Aesthetic Subject Matter," Proceedings of the Seventeenth Annual Meeting of the Philosophy of Education Society; Detroit, Michigan, 1961, Vol. 151.

Vivas, Eliseo, et al, The Problems of Aesthetics, New York, Rinehart, 1953.

Vygotskil, L.S., Thought and Language, MIT Press and Wiley, New York, 1962.

Walfflin, Heinrich, Principles of Art History, the Problem of the Development of Style in Later Art; London, G.Bell & Sons, 1932.

Weitz, Morris, (ed.), Problems in Aesthetics, New York, MacMillan, 1959.

Whipple. Guy M. (ed.), Art in American Life and Education; Bloomington, Ill., Public School Publishing Co., 1941.

Whitehead, Alfred N., Symbolism, its Meaning and Effect; New York, Capricorn, 1959.

_________________, The Aims of Education; New York, MacMillan, 1959.

Whyte, Lancelot L. (ed.), Aspects of Form; A symposium on Form in Nature and Art; New York, Pellegrini and Cudahy, 1951.

Wickiser, Ralph L., Introduction to Art Education; World Book, 1957.

Wilson, Robert N. (ed.), The Arts in Society, Englewood Cliffs, N.J., Prentice-Hall, 1964.

Winebrenner, D. Kenneth, Jewelry Making as an Art Expression; International, 1953.

Witkin, Herman A., Psychological Differentiation; Studies of Development, New York, Wiley, 1962.

_________________, Personality Through Perception; New York, Harper, 1954.

Wolfflin, Heinrich, Principles of Art History; London, G.Bell & Sons, 1932.

Worringer, Wilhelm, Abstraction and Empathy; New York, International Univ. Press, 1953.

Wright, Frank Loyd, An American Architecture; New York, Horizon Press, 1955.

Zevi, Bruno, Architecture as Space; New York, Horizon Press, 1957.

Ziegfeld, Ernest, Art in the College Program of General Education; New York, Bureau of Publications, Teacher's College, Columbia University, 1953.

Zigrosser, Carl, Six Centuries of Fine Prints; New York, Covici-Friede, 1937.

PROGRAM

Seminar in Art Education for Research and Curriculum Development
The Pennsylvania State University, University Park, Pennsylvania
August 30, 1965, to September 9, 1965

All meetings will be held in 101 Chambers Building

First Day - August 30, Monday

Registration of all participants	8:00 - 8:30 a.m.
Conference Introduction by Edward Mattil	8:45 - 9:00 a.m.
Paper by Francis Villemain	9:00 -10:00 a.m.
Discussion	10:00 -11:00 a.m.
Paper by David Ecker	11:00 -12:00 a.m.
Discussion	12:00 -12:30 p.m.
Paper by Joshua Taylor	2:00 - 3:00 p.m.
Discussion	3:00 - 4:00 p.m.
Paper by Harold Rosenberg	4:00 - 5:00 p.m.
Discussion	5:00 - 5:30 p.m.
Paper by Allan Kaprow	7:00 - 8:00 p.m.
Discussion	8:00 - 8:30 p.m.
Paper by Jerome Hausman	8:30 - 9:30 p.m.
Discussion	

Second Day - August 31, Tuesday

Paper by Melvin Tumin	9:00 -10:00 a.m.
Discussion	10:00 -10:30 a.m.
Paper by June McFee	11:00 -12:00 a.m.
Discussion	12:00 -12:30 p.m.
Paper by Dale Harris	2:00 - 3:00 p.m.
Discussion	3:00 - 3:30 p.m.
Paper by Kenneth Beittel	4:00 - 5:00 p.m.
Discussion	5:00 - 5:30 p.m.

Third Day - September 1, Wednesday

Paper by Elliot Eisner	9:00 -10:00 a.m.
Discussion	10:00 -10:30 a.m.
Paper by Manuel Barkan	11:00 -12:00 a.m.
Discussion	12:00 -12:30 p.m.
All participants will be assigned to one of five discussion groups.	2:00 - 5:00 p.m.
Interaction (Villemain, Rosenberg, Harris, Taylor Kaprow, Tumin, Eisner, Beittel)	7:00 - 8:30 p.m.

Fourth Day - September 2, Thursday

Redefinition of the problem areas	9:00 -12:00 a.m.

Individual development of research problems with specialists available for individual consultation.	2:00 - 5:00 p.m.

Fifth Day - September 3, Friday

Paper by Nathaniel Champlin	9:00 - 10:00 a.m.
Discussion	10:00 - 10:30 a.m.
Paper by Robert Lathrop	11:00 - 12:00 a.m.
Discussion	12:00 - 12:30 p.m.
Paper by Arthur Foshay	2:00 - 3:00 p.m.
Discussion	3:00 - 3:30 p.m.
Summary statement from Villemain, Rosenberg, Harris, Taylor, Kaprow, Tuman, Eisner	4:00 - 5:00 p.m.

Sixth Day - September 4, Saturday

Individual work and consultation with the research specialists.

Seventh Day - September 6, Monday

*Report and criticism.
Each participant who has turned in research abstracts will have 1½ hours to present proposals (these will be scheduled later).

Eighth Day - September 7, Tuesday

*Report and criticism.
Each participant who has turned in research abstracts will have 1½ hours to present proposals (these will be scheduled later).

Afternoon

Interaction by Nathaniel Champlin, Robert Lathrop and Arthur Foshay	2:00 - 3:30 p.m.
Report on status of research by Harlan Hoffa	4:00 - 5:00 p.m.

Ninth Day - September 8, Wednesday

*Presentation of Research and Development proposals for the entire group (approximately 20 minutes per proposal).

Tenth Day - September 9, Thursday

Conference evaluation by Asahel Woodruff	9:00 - 10:30 a.m.
Conference evaluation by U.S.O.E.	10:30 - 11:00 a.m.
Projection by Edward Mattil	11:00 - 12:00 a.m.

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*Ralph Beelke, W. Lambert Brittain, Herbert Burgart, Robert Burkhart, Laura Chapman, Howard Conant, Edmund B. Feldman, Guy Hubbard, Ivan Johnson, Vincent Lanier, Kenneth Lansing, John Michael, Mary Rouse, Ronald Silverman, Ralph Smith, William Stewart, David Templeton, Stanley Wold, Leon Frankston.